AN EXPLORATORY STUDY OF THE BEHAVIORS AND ATTITUDES OF REGULAR CLASS TEACHERS TOWARD SPECIAL NEEDS PUPILS INTEGRATED IN THEIR CLASSES

by

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ABSTRACT

Integrated special needs pupils may adjust better in the regular class if teachers' interactive behaviors are more positive and supportive with these children and if their attitudes are more favorable toward integration. The purpose of this investigation was to compare regular class teachers interactions with special and nonspecial needs pupils and to determine whether teachers' stated attitudes were related to their interactive behaviors.

Sixteen special and 16 nonspecial needs pupils matched for gender and in the same class, and their regular class teachers (n=16) were observed on three consecutive days. The observation of teacher-student interactions were made using a modified version of the Brophy-Good Teacher-Child Dyadic System (1969). Teacher attitudes toward special needs children and integration were assessed using a scale developed and pilot-tested for this investigation.

The analysis of the teacher attitude scores indicated that the teachers expressed predominantly favorable attitudes toward special needs children and integration. Consequently, it was not possible to form two distinct teacher attitude groups, namely, more and less favorably disposed teachers, for statistical analysis purposes. Instead, a qualitative analysis was conducted and for some interaction variables, it appeared that teacher feedback responses seemed to relate to teachers' stated attitudes.

The results of the dependent *t*-test analyses on the 44 interaction variables revealed eight differentiated teacher interactions between the special and nonspecial needs pupils. The teachers gave a higher percentage of praise and verbal feedback during group instruction and positive feedback and nurture responses during seat work activities to the special needs pupils than to the nonspecial needs pupils. Also, the teachers provided more work-related contacts and direct questions to the special needs pupils than to the nonspecial needs pupils. The nonspecial needs pupils, however, received a greater percentage of direct questions and opportunities to respond than the special needs pupils. The nondifferentiated findings indicated that for 36 variables, the teachers interacted similarly with the special and nonspecial needs pupils. The teachers gave a similar percentage of most feedback responses and types of contacts to both groups of pupils.

TABLE OF CONTENTS

Abstract ii

List of Tables viii

List of Figures xi

Acknowledgements. xii

CHAPTER

I INTRODUCTION 1

- Statement of the Problem 6
- Significance of the Problem 6
- Definitions 7
- Research Questions 9
- Organization of the Dissertation 10

II REVIEW OF LITERATURE 11

- Interaction Analysis 11
  - Observation Systems 12
  - Purposes of Classification Systems 15
  - Observational and Methodological Issues 16
  - Selection of an Observation System 18
- Empirical Studies on Teacher-Pupil Interactions 20
  - Teacher Attitudes 20
  - Teacher Expectancy 24
  - Teacher Perceptions Based on Student Behavior, Sex and Race 28
  - Teacher Awareness and Behavior in the Interactive Process 31
- Attitudes 32
  - Nature of Attitudes 33
  - Beliefs 35
  - Attitudinal Components of Beliefs 37
  - Evaluative Aspect of Beliefs 41
  - Strength of Beliefs 42
- Attitude-Behavior Relationship 44
- Empirical Studies on Attitudes 46
- Summary 54

III INSTRUMENTS 57

Description of the Brophy-Good System 57
Response Opportunities 59
Recitations 62
Procedural and Work-Related Contacts 62
Behavior Contacts 62
Reliability and Validity 63
Pilot Study of the Brophy-Good System 63
Formation of Variables and Clusters 66
Validation of Variables 69
Percentage Scores 69
Development of a Survey of Beliefs About Special Needs Children and Their Educational Programs 70
Pilot Studies 77
Teacher Professional Data 78
Pupil Demographic Data 78
Teacher Questionnaire Regarding Integrated Special Needs Children 79

IV SAMPLE, DATA COLLECTION AND ANALYSIS 80

Identification of Special Needs Children 80
Samples 83
Teachers 84
Pupils 84
Training of Research Assistants 85
Data Collection 87
Observation of Teacher-Pupil Interactions 87
Belief Scale Administration 89
Professional, Demographic and Questionnaire Data 90
Data Preparation and Analyses 90
Coding Observation Data 90
Percentage Score Data 90
Belief Scale Data and Analysis 92
Teacher Professional and Pupil Demographic Data 93
Teacher Questionnaire Data 93
Statistical Analysis 93

V RESULTS 95

Description of Samples 96
Biographic and Demographic Characteristics of Pupils . 96
Educational Program Components for the Special Needs Pupils 99
Characteristics of Teachers and Their Class 103
Teacher Responses to the Teacher Questionnaire Regarding Integrated Special Needs Children 103

Teacher Attitudes 119
  Psychometric Characteristics of the Attitude Instrument 119
  Difference Between Pilot and Main Study 119
Teacher-Pupil Interactions 122
  Statisitical Results of the Interaction Analyses . . . 123
Qualitative Analysis of the Teacher-Attitude Relationship 133
Discussion of the Results 137
  Comparison of the Quality of Teacher-Pupil Interactions in Praise, Positive Feedback and Nurture Responses 137
  Comparison of the Quality of Teacher-Pupil Interactions in Neutral and Informative Responses 139
  Comparison of the Quality of Teacher-Pupil Interactions in Negative Feedback and Critical Responses 142
  Comparison of the Two Groups of Pupils in Teacher-Pupil Contacts 143

VI SUMMARY, CONCLUSIONS AND IMPLICATIONS 148

Summary of the Study 148
Conclusions 155
  Teacher Attitudes and Behaviors 155
  Teacher-Pupil Interactions 156
Limitations of the Study 157
Implications of the Study 158
  Implications for Future Research 158
  Implications for Practice 160

REFERENCE NOTES 162

REFERENCES 163

Appendix A: Pilot Scale I - A Survey of Beleifs About Special Needs Children and Their Educational Placement 176

Appendix B: Item Polarity 183

Appendix C: Pilot Scale II - A Survey of Beliefs About Special Needs Children and Thier Educational Programs 186

Appendix D: A Survey of Beliefs About Special Needs Children and Their Educational Programs 192

Appendix E: Teacher Professional Data 198

Appendix F: Pupil Demographic Data 199

Appendix G: Teacher Questionnaire Regarding Integrated Special Needs Children 201

Appendix H: Introductory Letter to Superintendent 207

Appendix I: Introductory Letter to Teacher 208

Appendix J: Coder Introduction Letter 209

Appendix K: Teachers' Comments to Items on Teacher Questionnaire Regarding Integrated Special Needs Children 210

Appendix L: Mean Percent of Feedback or Contact Given to the Special and Nonspecial Needs Pupils by the Three Teachers with the Most and Least Favorable Attitudes, and the Percent of Discrepancy Between the Teacher and Pupil Groups 214

List of Tables

Table 1: Hypothetical Attitude Toward Special Needs Children 40

Table 2: Variables for Teacher Responses 67

Table 3: Variables for Created Contacts 68

Table 4: Dependent Variable Formulae 71

Table 5: Intercoder Agreements During Training 87

Table 6: Researcher-Coder Percent of Agreement 89

Table 7: Description of Pupils 97

Table 8: Support Services and Time Provided for Supplemental Assistance to the Special Needs Pupils 100

Table 9: Subject Areas in Which the Special Needs Pupils Participated with Other Class Members 101

Table 10: Types of Individualized Programs Implemented for the Special Needs Pupils 101

Table 11: Description of Teachers and Their Class 104

Table 12: Personnel Involved in the Integrated Placement of the Special Needs Pupil 106

Table 13: Personnel Who Gave On-Going Support to the Regular Class Teachers During the Integration Process . . 107

Table 14: Services Provided by the Special Education Teacher 108

Table 15: Special Education Teacher's Involvement in the Special Needs Pupil's Program 109

Table 16: Consultive Services Provided by the Special Teacher and Other School Personnel 110

Table 17: Availability of and Recommendations for Support Services 111

Table 18: Teacher Preparation and Experiences for Instructing Special Needs Pupils 113

Table 19: Degree of Success the Teachers Experienced in Teaching the Special Needs Pupils 113

Table 20: Integration Effects on the Teacher and the Non-Special Needs Pupils 114

Table 21: Integration Effects on Teacher's Time 116

Table 22: Assistance and Attention Required by the Special Needs Child 117

Table 23: Types of Additional Teacher Feedback Given to the Special Needs Pupil 118

Table 24: Psychometric Results of Teacher Attitude Instrument 120

Table 25: Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Teacher Praise for the Special and Nonspecial Needs Pupils . . . 124

Table 26: Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Positive Teacher Feedback for the Special and Nonspecial Needs Pupils 125

Table 27: Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Teacher Nurture for the Special and Nonspecial Needs Pupils . . . 126

Table 28: Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Informative Feedback Given to the Special and Nonspecial Needs Pupils 126

Table 29: Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Teacher Neutral Responses for the Special and Nonspecial Needs Pupils 128

Table 30: Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Negative Teacher Feedback for the Special and Nonspecial Needs Pupils 128

Table 31: Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Teacher Criticism for the Special and Nonspecial Needs Pupils . . . 130

Table 32: Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Type of Response for the Special and Nonspecial Needs Pupils . . . 130

Table 33: Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Teacher Afforded Contacts for the Special and Nonspecial Needs Pupils 132

Table 34: Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Child Created Contacts for the Special and Nonspecial Needs Pupils 132

Table 35: Mean Percent of Feedback or Contact Given to the Special and Nonspecial Needs Pupils by the Three Teachers with the Most and Least Favorable Attitudes, and Percent of Discrepancy Between the Teacher and Pupil Groups 214

List of Figures

Figure 1: Modified Brophy-Good Teacher-Child Dyadic Interaction Coding Sheet 65

Figure 2: Distribution of Teachers' Attitude Scores 120

Figure 3: Mean Proportion of Teacher-Pupil Interactions or Contacts with the Special and Nonspecial Needs Children for Each Independent Variable 152

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CHAPTER I

INTRODUCTION

The philosophical trend toward mainstreaming has resulted in a direct increase in the integration of slow learning and educable mentally retarded (EMR) children into the regular classroom (Heydorn, 1976; Kendall, 1971; Reynolds, Martin-Reynolds and Mark 1982; Safran, 1971). The integration of these special needs children is an attempt to provide a more normalized school environment. The integration of slow learning and EMR children, however, has not been totally successful. The limited success of mainstreaming has been attributed mainly to two factors: (a) minimal social acceptance and adjustment of special needs pupils; and (b) regular class teachers' attitudes toward integrating these children.

Research evidence documenting the degree of social acceptance and adjustment of slow learning and EMR children has varied (Baldwin, 1958; Budoff and Gottlieb, 1976; Dunlop, Stoneman and Cantrell, 1980; Gresham, 1982; Goodman, Gottlieb, and Harrison, 1972; Gottlieb, 1983; Gottlieb and Budoff, 1973; Iano, Ayers, Heller, McGettigan and Walker, 1974; Johnson, 1950). The results of this research, however, have led special educators to agree generally that the integrated EMR children are socially segregated in the regular class.

Peer perceptions and interactions, teachers' perceptions, and the overt behaviors of EMR children have been studied to determine why EMR students are socially segregated in the regular class (Clark, 1964; Gampel, Gottlieb and Harrison, 1974; Gottlieb, Gampel and Budoff, 1975; Gottlieb, 1978; Lapp, 1957). The results have been based primarily on self-report instruments and no conclusive findings have been reported.

In the assessment of the EMR children's social relationships with significant others, the primary focus has been on parent or peer interactions (Sackett, 1978). Yet, social theory has documented the affective role the teacher plays in reinforcing and developing more positive attitudes of pupils toward themselves, school and others. The teacher is very influential in helping children to be recognized in positive ways by their peers (Feshbach, 1971; Lapp, 1957; Purkey, 1970; Retish, 1973). The importance of the role of the teacher is stated by Gottlieb (1978):

> ...the teacher, being the most influential member of the classroom group, is able to influence the retarded child's behavior directly through the many reinforcers and sanctions she controls, and is able to influence the retarded child's behavior indirectly by controls she exerts over the peer group.
>
> (p. 297)

In agreement, Turnbull and Schulz (1979) view the teachers' verbal and non-verbal behaviors as contributory to (a) the self-image of special needs children and (b) how classroom peers perceive them.

Similarly, teachers serve as role models for their pupils and previous research indicates that "children imitate teachers' behaviors and values that are incidental to the curriculum objectives" (Feshbach, 1971, p. 73). In addition, expressions of teachers' attitudes toward special needs children may be adopted by the class. Silberman (1969) contends that teacher attitudes are revealed in their behaviors with pupils. Furthermore, teacher

> ...actions not only serve to communicate to students the regard in which they are held by a significant adult, but they also guide the perceptions of, and behaviors toward, these students by their peers.
>
> (p. 407)

The importance of teacher-pupil interactions in the educational process has been supported by Brophy (1981), Brophy and Good (1974), Cratty (1971), Levin and Long (1981) and Zahorik (1980). Gammage (1971) contended that the interactions between the teacher and pupil are "one of the most important aspects of the educative process and possibly one of the most neglected" (p. 32). Particularly for the special needs students, the necessity of monitoring teacher-pupil interactions has been advised by numerous researchers (e.g., Alexander and Strain, 1978; Good and Brophy, 1977; Goodman, 1979; Horne, 1979). Furthermore, Goodman (1979) has stressed the importance of devising "socially acceptable visibility" for the integrated special needs students by directing positive interactions and gestures to these children (p. 99). As well, Larrivee (1981) has recommended the use of positive and supportive interactions with mainstreamed students.

Even though knowledge of teacher-pupil interactions has been identified as an area of investigation, few studies in special education have been directed to teacher interactions. In the past, interactive studies have focused on high and low achievers (Brophy and Good, 1970; Cornbleth, Davis and Burton, 1974; Jeter and Davis, 1973), racial differences (Bylick and Bersoff, 1974; Jackson and Cosca, 1974; Washington, 1980) and behavioral and sex differences (Martin, 1972; Polowy, 1978). More recently, Chapman, Larsen and Parker (1979) have attended to disabled pupils and investigated teacher interactions among learning disabled children and three other groups of students identified in the regular class. Their results demonstrated that there were specific differences in teacher-student interactions among the four groups. Noteworthy differences were that the teachers gave more praise and critical feedback responses to the learning disabled group.

Other interactive studies have investigated either teacher attitudes or perceptions and teacher-student interactions (Cornbleth and Korth, 1980; Garner and Bing, 1971; Good and Brophy, 1972; Polowy, 1978; Silberman, 1969; Washington, 1980; Willis, 1970). Silberman (1969) and Good and Brophy (1972) had teachers identify students toward whom they had an attitude of attachment, concern, indifference or rejection. The results of the observational data showed that teachers did treat these students differently in frequency of contacts and in negative and positive responses. In contrast, Washington (1980) and Cornbleth and Korth (1980) did not find that teachers' attitudes toward racially different groups affected their interactions with the black and white students. Washington (1980), however, did report differences in interactive patterns based on racial group ascription, not attitudes.

Generally, educators have stated that the success of integration and mainstreaming is contingent upon the attitude of the regular class teacher (Berryman, Neal and Robinson, 1980; Bertness, 1976; Graham, Hudson, Burdg and Carpenter, 1980; Hirshoren and Burton, 1979; William and Algozzine, 1979). The attitude of the teacher can affect special needs children's emotional and social adjustment in the regular class (Berryman, Neal and Robinson, 1980; Cratty 1971; Ensher, 1973; Johnson and Cartwright, 1979) and teacher attitudes also may influence the nature of classroom interactions between the teacher and special needs students (Ensher, 1973; Horne, 1979; Turnbull and Schulz, 1979; Washington, 1980).

Research to date has focused primarily on surveying the attitudes of teachers toward EMR children in the regular class environment. The results of these studies indicated that regular class teachers generally express less favorable attitudes toward integration (Barngrover, 1971; Childs, 1981; Gickling and Theobald, 1975; Moore and Fine, 1978; Shotel, Iano and McGettigan, 1972; Williams and Algozzine, 1979). Frequent concerns of regular class teachers included: a) the need to spend a greater amount of time with EMR students; b) the EMR's pupils' inability to follow directions; c) their disruptive behaviors; and d) restricting the progress of other children (Barngrover, 1971; Forness, 1979; Graham, Hudson, Burdg, and Carpenter, 1980; Reynolds, Martin-Reynolds and Mark, 1982; Zawadski, 1973). Teacher attitudes were measured by various scaling techniques and/or interviews and these attitudes may have been based on formed perceptions of the EMR children. Jones, Gottlieb, Guskin and Yoshida (1978) stated that data are needed to support or allay these attitudes and perceptions and they recommended the use of observational techniques. Accordingly, the intent of the present study was to explore some of the claims of the regular class teachers through the use of observation in identifying teacher-pupil interactive patterns and to assess the relationship between these patterns and teachers' stated attitudes toward integration.

Statement of the Problem

To date, limited research has been directed toward studying the regular class teachers' interactive behaviors toward the integrated slow learning and EMR children. Even though the teacher may directly affect the social adaptation of the EMR children in the regular class, empirical research evidence has not documented the role the teacher plays in influencing these children's behaviors (Gottlieb, 1978). Therefore, by investigating the regular class teachers interactive behaviors toward integrated special needs (slow learning and educable mentally retarded) and nonspecial needs children, differences in teacher interaction patterns may be revealed. In order to improve the special needs pupils' status in the regular class, specific teacher and pupil behaviors need to be identified.

Based upon the aforementioned research and recommendations, the major question addressed in the present study was: Do regular class teachers interact differently with integrated special needs pupils than with nonspecial needs pupils? The second question addressed was: Do regular class teachers' interactive behaviors toward special needs pupils relate to their stated attitudes about integration?

Significance of the Problem

In investigating the process of mainstreaming and EMR children's social adjustment in the regular class, the study of teacher interactions has been neglected (Chapman, Larsen and Parker, 1979; Perry, 1978; Sackett, 1978). In order to help teachers create successful climates in mainstreamed classes, present teacher and pupil interactive behaviors need to be analysed. An additional concern about mainstreaming involves the assumption that teacher behaviors are related to their stated attitudes. Even though a direct relationship between attitudes and interactive behaviors has not been established (e.g., Cornbleth and Korth, 1980; Washington, 1980), the claim is that teachers affect pupils directly in the social context of interactions (Silberman, 1969, p. 96). An understanding of teacher-pupil interactions and their relationship to teachers' stated attitudes is necessary in order to determine how special needs children may better adapt in the regular class.

Definitions

Special needs pupils: Children with IQ scores between 50 and 85 as measured on the Wechsler Intelligence Scale for Children-Revised, who are identified as special needs pupils by their school district, who are receiving special services or instruction in their schools on a part-time basis, and who are not identified as having any severe emotional, physical or sensory disabilities. (If labeled, the special needs pupils in this study would be formally categorized as educable or borderline mentally retarded.)

Nonspecial needs pupils: Children who are not identified by their school district as special needs pupils, who are not receiving any special educational services in their school, and who are not identified by their teacher as having any severe emotional, physical or sensory disabilities.

Mainstreaming: As defined by Kaufman, Gottlieb, Agard and Kukic (1975):

> Mainstreaming refers to the temporal, instructional, and social integration of eligible exceptional children with normal peers based on an ongoing, individually determined educational planning and programming process and requires clarification of responsibility among regular and special education, administrative, instructional, and supportive personnel.
>
> (p. 40-41)

Integration: In this study, integration conveys the meaning of mainstreaming. Integrated special needs pupils were assigned to the regular class for half or more of the school day.

Contact: "A unit of interaction which consists of 1) one subject, 2) one agent, 3) one raison d'etre, and 4) one continuous topic" (Dyck, 1963, p. 81).

Teacher-pupil interactions: Observable sequence of actions and reactions in each contact between the teacher and pupil as measured by the Brophy-Good Teacher-Child Dyadic Interaction System (1969).

Belief: A belief represents some information a person has about an object. Specifically, it can consist of two components: belief in the existence of an object and belief in the existence of a relationship between that object and some attribute. Operationally, belief can be measured by a procedure which places the subject along a dimension of subjective probability involving some object and some related attribute (Fishbein, 1967, pp. 259-60; Fishbein and Ajzen, 1975, p. 12).

Attitude: "A learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (Fishbein and Ajzen, 1975, p. 6).

Attitude toward special needs pupils and integration: Operationally defined as the degree of favorableness toward special needs pupils and integration as measured by the sum of beliefs, i.e., belief strength, on the scale, A Survey of Beliefs About Special Needs Children and Their Educational Programs.

Research Questions

The specific research questions addressed in this exploratory study were:

1. Do regular class teachers provide different types of contacts with special needs and nonspecial needs pupils?

2. Is the quality of regular class teachers' interactions different with integrated special needs pupils than with nonspecial needs pupils?

3. Do regular class teachers provide more positive/supportive or negative/nonsupportive interactions with special needs pupils than with nonspecial needs pupils?

4. Do special needs pupils demand more or less directed contacts with regular class teachers than nonspecial needs pupils?

5. Are regular class teachers who have special needs pupils enrolled in their classes more or less favorable toward integration and special needs pupils?

6. Do regular class teachers who express more favorable attitudes toward integrated special needs pupils interact differently with their special needs pupils than teachers who express less favorable attitudes?

Organization of the Dissertation

This dissertation is organized in five additional chapters. Literature pertinent to the study is reviewed in Chapter II. The methodology of the study is presented in two chapters. In Chapter III, the development of the modified Brophy-Good Teacher-Child Dyadic Interaction System (1969) and the attitude scale are described together with the construction of three questionnaires designed to collect additional information about the samples. The identification of the samples, data collection procedures and the statistical analyses are described in Chapter IV. The results and discussion are reported in Chapter V. The summary of the study, conclusions and implications for future research and practice are presented in Chapter VI.

CHAPTER II

REVIEW OF LITERATURE

The first section of this chapter begins with a description of classroom observation systems, their uses and limitations. This is followed by a rationale for the selection of the observation system used in the present study. In the next section, empirical studies which have used systematic observation techniques in the classroom environment are reported. The studies reviewed examined teacher and student interactions where different types of pupils were compared. In some studies, classroom interactions were also related to teacher expectencies, perceptions or attitudes. The theoretical and research background on attitudes and beliefs are described and reviewed in the third section. Following this, the attitude-behavior relationship is discussed and investigations on teachers' attitudes toward mainstreaming are presented. A summarization of the reported studies directed to the issues of the present study conclude this chapter.

Interaction Analysis

Interaction analysis, as defined by Flanders (1970), "...refers to any technique for studying the chain of classroom events in such a fashion that each event is taken into consideration" (p. 5). Interaction analysis usually includes the following sequential procedures: 1) teacher and pupil behaviors are systematically observed and recorded; 2) the recorded data are analysed; and 3) interpretations of the analysis are formulated (Yoloye, 1977). Observation schemes have been devised for the purpose of providing systematic recording techniques (Flanders, 1970, p. 6). Over 200 observation systems have been developed to describe and analyse specific dimensions of classroom behavior. The majority of these instruments have focused on affective and/or cognitive processes which relate to teacher and/or pupil behavior.

Observation Systems

Initially, observation systems were developed to describe the social-emotional climate of the classroom by focusing on teacher style. For example, Anderson (1939) devised his system to identify teacher behavior as being dominative or integrative. Based on Anderson's system, Withall (1949) developed the Social-Emotional Climate Index to describe the classroom environment in terms of teacher-centered or learner-centered. He used the following seven categories to classify teachers' verbal statements: learner-supportive, acceptant, problem structuring, neutral, direction, reproving and self-supporting.

Other categorical observation systems that focused primarily on teacher behaviors were developed during this period, such as, Medley and Mitzel's (1958) Observation Schedule and Record (OScAR), and Flanders System of Interaction Analysis. An extended version of OScAR was developed by Medley, Impellitteri and Smith (In Simon and Boyer, 1974). The OScAR 4V system identifies affective as well as cognitive and procedural classroom processes, and also categorizes teacher and pupil statements and interchanges. The coding of teacher's behaviors on this schedule report how the teacher initiates an interaction with a pupil and the types of reponses the teacher gives to pupils' classroom comments (Simon and Boyer, 1974, p. 401).

The most well known and used classroom observation scheme is the Flanders System of Interaction Anaysis (FSIA). This system was originally designed for research purposes, primarily, to describe the verbal interaction patterns of teachers "categorized as direct or indirect" (Amidon and Flanders, 1967, p. 130). The major focus of the system is on teacher's affective behaviors during instruction of the total class. The Flanders system includes ten categories: accepts feelings; praises or encourages; accepts or uses ideas of student; asks questions; lecturing; giving directions; criticizing or justifying authority; student-talk responses; student-talk initiation; and, silence or confusion. The frequency of the observed behaviors is tabulated in a specified matrix form. The matrix data are analysed and interpreted to describe patterns of teacher interactions in terms of percentages of each categorized behavior as well as in ratios, such as the indirect statement/direct statement (I/D) ratio.

Numerous systems have been based on the FSIA including an observation scheme developed by Amidon and Hunter (1967). The Verbal Interaction Category System (VICS) contains five major categories and 17 subcategories, and thus, distinguishes more behaviors than the FSIA. The major categories in VICS are: teacher-initiated talk; teacher response; pupil response; pupil-initiated talk; and, other. Amidon and

Hunter (1967) compared the differences between the VICS and FSIA. The VICS 1) does not include the dimension of direct and indirect teacher influence; 2) differentiates the type of teacher question by using subcategories of "Asks Narrow Question" and "Asks Broad Question"; and, 3) has additional categories for coding teacher and pupil responses (p. 145). Coding and matrix interpretation, however, are similar to the FSIA. Like the Flanders system, VICS was devised to analyse classroom interactions for research purposes, but also it is used for evaluation and improvement of instruction.

Earlier systems including schedules based on the FSIA focused primarily on teacher behaviors in order to analyse teacher style and/or instructional dimensions of classroom interactions. Ober (In Ober, Bentley and Miller, 1967), however, adapted the FSIA by additionally categorizing pupil behaviors. The Reciprocal Category System (RCS) analyses the social-emotional dimensions of classroom interactions and can be used reciprocally for both the teacher and pupil. The ten categories defined in this system are: "warms" (informalizes) the climate; accepts; amplifies the contributions of another; elicits; responds; initiates; directs; corrects; "cools" (formalizes) the climate; and, silence or confusion.

Brophy and Good (1969) developed an observation system which focuses on the individual child in classroom interactions. The Brophy-Good Teacher-Child Dyadic Interaction System is designed to record all dyadic interactions between the teacher and each pupil in the class. These interactions are recorded in terms of the quality of the contact (how the teacher interacts with the pupil) and the quantity of the contacts (the frequency of the teacher interactions with the pupil). There are five major categories in the system: response opportunities, recitation, work-related contacts, procedural contacts, and behavioral contacts.

Brophy and Good (1969) devised this system for research purposes, mainly, to examine: 1) the differences in teacher behaviors toward different types of pupils; and, 2) the relationship between teacher expectancies and teacher-pupil interactions. A detailed description of the Brophy-Good Teacher-Child Dyadic Interaction System is presented in Chapter III.

Purposes of Observation Systems

Simon and Boyer (1970) classified observation instruments according to their use in education. The four purposes identified are: 1) to describe current classroom practices; 2) to train teachers; 3) to monitor instructional systems; and, 4) to investigate relationships between classroom activities and student growth. In discussion of these purposes, Rosenshine and Furst (1973) and Bennett and McNamara (1979) stated that most systems have been used for more than one reason. The majority of the systems, however, were developed for the purpose of observing and describing events and behaviors in the classroom environment. Some systems were devised solely to train teachers and to help teachers improve their instruction. In addition, these systems have been used for evaluation purposes, such as for supervision and self-evaluation. Other instruments were devised to monitor instructional programs focusing on specific teaching approaches, educational programs and materials, such as individualized instruction, science and math programs (Rosenshine and Furst, 1973). For the purposes of research, observation systems were developed to study relationships between classroom activities and student growth. These instruments have been used in correlational and experimental investigations where researchers have analysed and interpreted relationships between instructional processes and pupil achievement, attitude and behavior. Stallings (1976), for example, in her national study of the Follow Through Project, observed teachers and pupils, and then, related classroom instructional practices to pupil outcomes, such as test scores and child behaviors (p. 43).

Observational and Methodological Issues

As reviewed, observation systems have been developed and used for specific purposes in interaction analysis. The general contributions attributed to these systems have been documented in systematic observational research (Bennett and McNamara, 1979; Dunkin, 1979; Dunkin and Biddle, 1974; Rosenshine and Furst, 1973; Simon and Boyer, 1974). Dunkin (1979), for example, stated that "there has been tremendous development in the realization and representation of the patterns and complexities of classroom behavior..." (p. 135). Overall, observation systems provide a reliable and simple way to record and analyse teacher and pupil behavior in the natural classroom environment (Hamilton and Delamont, 1979, p. 158).

The general weaknesses associated with observation systems have also been discussed. Nelson (1969) stated that the limitations of earlier instruments were that the systems focused primarily on teacher behavior and the affective dimensions of classroom interactions. She contended that pupil behavior and cognitive processes needed to be emphasized as well. Dunkin and Biddle (1974) and Rosenshine (1971) criticized the teacher behavior items contained in observation schedules for being too global in nature. As new systems developed, however, more specific teacher and pupil behaviors as well as additional classroom dimensions were included. Nevertheless, a major restriction continues to be that an observation system measures only observable and categorical behaviors within the particular scheme. As a consequence, other types of contextual information, such as social and temporal dimensions, may not be considered in interaction analysis. "By ignoring context, emphasizing the overt and concentrating on the measurable interaction analysis accounts for only a small part of the totality of classroom life" (Hamilton and Delamont, 1979, p. 159). Flanders (1970) also acknowledged that other important classroom features are not included in observation systems. Therefore, Dunkin (1979), Berliner (1976) and Hamilton and Delamont (1979) have emphasized the need to explore the influence of context variables in systematic observational research.

Other areas of focus in interaction analysis research have been on the validity and reliability of observation instruments and the statistical analysis used to interpret relationships in empirical and correlational studies (Berliner, 1976; Brophy and Everston, 1981; Cooper and Good, 1983; Dunkin, 1979; Hurwitz, 1973; Rosenshine and Furst, 1973). Berliner (1976), for example, reviewed and evaluated studies that dealt specifically with the validity and reliability measures of observation systems. Generally, Berliner's major criticism was that the methods employed to establish validity and reliability of observation systems have varied extensively. By systematically reviewing past studies, however, Berliner (1976) identified specific recommendations for developers of descriptive observation systems.

One of the most problematic issues in the statistical analysis of interaction research is that most samples used in empirical research are small. Consequently, relationships must be quite strong in order to be statistically significant (Cooper and Good, 1983; Dunkin, 1979; Freidrich, 1982). Cooper and Good (1983) suggested that researchers consider using higher levels of significance than .05 when examining relationships in studies with small sample sizes. Also, they recommended that the interaction analysis data from sample sizes of less than 10 classes be interpreted descriptively instead of statistically (p. 50).

Selection of an Observation System

As reviewed, numerous observation systems are available for many purposes. The systems described earlier only represent a sample of schedules developed to observe and record teacher and pupil behaviors in the classroom environment. There is some criticism for the development of new observation systems when established schemes already exist (Bennett and McNamara, 1979; Dunkin, 1979; Rosenshine and Furst, 1973). The general recommendation for selecting an observation system for training or research purposes is to review systems that already exist and have been successfully implemented in observational studies

(Ober, Bentley and Miller, 1971, p. 36). This general recomendation was accepted in the present study and various observation systems and methods (Beegle and Brandt, 1973; Boehm and Weinberg, 1977; Borich and Madden, 1977; Dunkin and Biddle, 1970; Medley and Mitzel, 1963; Rosenshine, 1970; Rosenshine and Furst, 1973; Sackett, 1978; Simon and Boyer, 1970; 1974; Soar, 1974; Weick, 1968) were reviewed.

Based upon this review and taking account of the purposes of the current investigation, the Brophy-Good Teacher-Child Dyadic Interaction System (1969) was considered to be the most useful and appropriate observation scheme. The Brophy-Good Teacher-Child Dyadic Interaction System was selected because this observation scheme: 1) focuses on teacher and individual pupil behavior in the class environment; 2) categorizes affective, cognitive and procedural dimensions of classroom behaviors (Simon and Boyer, 1974); 3) provides for the comparison of teachers toward different types of pupils; 4) provides for the sequential recording and analysis of behaviors; 5) categorizes behaviors for total class instruction, as well as for individual and small group activities; and, 6) has established reliability and validity (Brophy and Good, 1969). In addition, the Brophy-Good Teacher-Child Dyadic Interaction System (Brophy-Good System) was developed for research purposes and has been used extensively in empirical investigations, particularly, studies that have examined teacher interactions between different types of pupils and the relationship between teacher expectancies and teacher-pupil interactions. Descriptions of numerous studies that have used the Brophy-Good System are included in the next section.

Empirical Studies on Teacher-Pupil Interactions

In this section, studies that focused on teacher interactions with different types of children are reviewed. In some of these studies, the assessed attitudes, expectancies, or perceptions of the teachers were used to identify the different types of pupils observed. In other investigations, student gender, race or behavior differentiated the pupil groups. Also reported in this section are investigations that demonstrated the ability of the teachers to change their interactive behaviors with various types of pupils.

Teacher Attitudes

Silberman (1969) conducted a study to determine whether teacher attitudes toward specific students would be reflected in their direct behavior with these students. Teachers were asked to identify students toward whom they had an attitude of attachment, concern, indifference, or rejection. The named students and selected control students were observed in the classroom setting.

Results showed that the teachers did treat these students differently in frequency of contacts and in negative or positive evaluative responses. "Attachment" students received significantly more positive evaluative responses from the teachers; the "concern" students received significantly more contacts from the teachers; "indifference" students received significantly less contacts; and "rejection" students received significantly more negative responses. Another noteworthy finding was that these students were able to predict their teacher's behavior toward them and the other students.

In 1972, Good and Brophy conducted a similar study with emphasis on improving Silberman's design. Good and Brophy incorporated a larger sample of students in each classroom, and recorded teacher-pupil interactions using the Brophy-Good System (1969). Attitudinal data were collected after observational procedures were completed. Their findings supported Silberman's results and all four attitudes revealed differential teacher behavior toward the students. Good and Brophy also found that rejected students did not receive similar teacher contacts and the teacher feedback involved more criticism to these students than their classmates. Teachers avoided contacts with the rejected students.

In 1973, Good and Brophy's investigation was replicated by Everston, Brophy, and Good. The results of their study produced few significant group differences. Mainly, attachment students created more work, procedural, and total contacts with their teachers, and they received more reading turns than their classmates. The significant findings were most often student-created contacts with the teacher, not teacher-initiated. Therefore, the teacher attitudes toward attachment students did not produce different interactions with these students. The only significant teacher-initiated interaction was in giving attachment students more reading turns. The investigators concluded that this was not suggestive of reflecting teacher attitudes but that the higher achievement level of attachment students should be considered as the factor in their attainment of more reading turns than other students.

In order to determine whether teachers differ in the amount of contacts they give to individual students, Garner and Bing (1973) had seven English primary school teachers rank their students on an eleven item personality bi-polar scale. Teacher-student interactions were observed in the classrooms and the results indicated that teachers interacted most often with students who were bright, high achievers, or mischievious but amusing and sociable. They discovered that these students controlled the amount of contact with the teacher. High initiation interactions by students resulted in more teacher contacts with these students and the researchers concluded that the teachers failed to respond to individual differences of students.

Cornbleth and Korth (1980) investigated teachers' attitudes toward black and white children integrated in their classrooms and teacher-student interaction patterns. The researchers expected that teacher attitudes as shown by their perceptions of these students would be reflected in their interactions with them.

The seven student teachers involved in this study were requested to rate all their students on twelve scales. The scales measured teachers' perceptions of student personal and behavioral characteristics. Four of the student teachers were selected for six hours of classroom observations where coders recorded teacher-student interactions between the teachers and 28 students.

The classroom observations were recorded using a modified version of the Brophy-Good Teacher-Child Dyadic Interaction System. From this system, a total of 37 dependent variables were identified and clustered into five categories. A larger number of dependent variables were coded originally, but were not included because they occurred too infrequently. The five clustered categories were: 1) teacher questioning; 2) quality of student participation; 3) teacher feedback in teacher afforded contacts; 4) teacher feedback in student initiated contacts; and 5) other teacher-student contacts (e.g., discipline contacts, student initiated interactions, total student participation). The results showed no significant differences in teacher-student interactions between student race, sex, or race and sex.

Contrary to the researchers' predicted hypotheses, the student teachers did not interact differently with black and white or female and male students. Even though the results obtained from the student characteristics' profile indicated that the student teachers perceived their white students more favorably than their black students, they did not reflect their feelings towards these students in their interactions with them. As the researchers stated, their results contradicted former studies that showed differential interaction treatment.

The purpose of the study conducted by Washington (1980) was to ascertain whether teachers' perceptions and attitudes toward black and white students were consistent with teachers' interactive behaviors. Five black and five white second grade teachers were requested to rate the characteristics they ascribed to the black and white students in their classes. In addition, two attitude scales were administered to these teachers to measure: a) teacher attitudes toward school integration; and, b) teachers' social distance. Information on teachers' educational and professional experiences was also collected. An observation system was developed and included four positive and four negative teacher behaviors. Teacher interactions with their students were recorded for one hour during reading group instruction.

The observation results based on proportional representation for each racial group indicated that white teachers responded 4% more to black children than to white children in their classes; black teacher responses were directed 2% less to black students. The white teachers called on the black students more frequently than black teachers but white teachers also "rejected" or "ignored" the black children's answers and responses more often than the black teachers. Both groups of teachers, however, were more positive than negative in their responses during the reading group instruction.

Although the researcher expected that teacher attitudes and perceptions of the black and white children would affect their interactions with them during class instruction, the results did not confirm this prediction. Specifically, the assumption that attitudes, in fact, affect how teachers interact with students was not proven in this study. Furthermore, it appeared that white teachers who had more negative attitudes and perceptions toward black children responded in a more positive manner and directed more responses to them. Similarly, black teachers' interactions were seen as more favorable to the white children in their classes. Washington concluded that "teachers in integrated classrooms appear to be engaging in overcompensating behavior toward children of the other race" (p. 200).

Teacher Expectancy

Willis (1970) conducted a study to assess teacher-student interactions in five special education classrooms. The teachers were asked to rank their students from most efficient to least efficient learners. Only the children rated as least efficient and most efficient learners were observed in each classroom. The analyses of the observational data showed that students who were rated as most efficient received more verbal consequences (talk, question, answer, command, and ignore) from the teachers for their behaviors. The most efficient learners had a significantly higher frequency of behaviors (talk, question, answer, and attention) than the least efficient learners. The less efficient learners tended to be ignored by the teachers. Thus, students that were perceived as less efficient learners were treated differently by the teachers.

Brophy and Good (1970) requested four teachers to rank their students in order of their school achievement. Three boys and three girls who were rated high and an equal number of students who were rated low were selected from each of the classrooms. The Brophy and Good Dyadic Interaction System was used to record the teacher-student interactions. Their main findings indicated that the high achieving students received more teacher praise and support than the low achieving students. Teacher criticism and disapproval were directed more frequently to boys than girls. The overall findings in all four classrooms showed that the low achievers received less teacher attention, feedback and praise, and more criticism than the higher ability students. The investigators confirmed their position that teacher expectations function as self-fulfilling prophecies.

Jeter and Davis (1974) conducted a similar study of teacher interaction with high and low expectation students. Ten fourth-grade social studies teachers and 120 students were observed using the Brophy and Good Dyadic Interaction System. The results showed that high expectation students were provided with more response opportunities, total contacts, and questions. These students received more teacher feedback to their answers, less criticism for incorrect answers, and more opportunities for a second response to questions. This study and Brophy and Good's (1970) investigation demonstrated that teacher behavior was different toward high and low expectancy pupils.

Another study that employed the Brophy-Good Teacher-Child Dyadic Interaction System was conducted by Cornbleth, Davis and Burton (1974). In their investigation, seven student teachers and the four highest and the four lowest ranked students in their classes were observed for four hours. The results of the interaction analysis showed that the student teachers interacted more frequently with the higher ranked achievers and directed more questions to them. Moreover, the expected higher achievers were given more opportunities to respond and these children also initiated more interactions with their teachers. Based on these results, the researchers concluded that teachers did not compensate or assist low achievers by directing more questions to them or by interacting more with them during seat work activities. In the specific categories of teacher feedback responses, the findings showed that praise, criticism, and sustaining feedback were not different between the two groups of pupils.

As reviewed, numerous studies have compared teacher-student interactions with high and low achievement students; yet, little research has contrasted the interactions of teachers with disabled and other children in the regular class. In the past, studies that have investigated disabled students' interactions have specifically focused on the children's classroom behavior and/or the type and frequency of contacts with their peers (e.g., social interactions). In 1979, however, Chapman, Larsen and Parker researched teacher interaction patterns with learning disordered (LD) and the other students in their class. The researchers compared the type and amount of responses that LD and other pupils received from the teacher and ones the children initiated themselves.

Four teachers and 110 first grade students were involved in the study. The percent of students who were placed in each group was as follows: 15% learning disordered; 17% low achievers; 42% medium achievers; and 26% high achievers, based on teacher ratings and achievement scores.

Teacher-student interactions were recorded using the Brophy-Good Teacher-Child Dyadic Interaction System. From this system, 86 dependent variables were identified and analysed using ANOVA. The analyses revealed that LD students received more praise, criticism and teacher feedback in group instruction than the other groups. In addition, the LD students were given more criticism during procedural contacts and more criticism and warnings in response to their general behavior. The authors suggested that praise and criticism may have been used more frequently with LD students during group instruction to assist these children in modifying their learning behavior; whereas, the use of more criticism and warnings may have reflected the teachers' inability to cope with the LD students' needs.

Generally, the teachers provided similar response opportunities during group instruction to all groups of students. Nevertheless, LD students elicited a higher rate of teacher responses in work-related, procedural and behavioral contacts.

Teacher Perceptions Based on Student Behavior, Sex and Race

Student behavior, sex and race and their influence on teacher interactions have been investigated. The previously reviewed studies of Garner and Bing (1973) and Everston, Brophy and Good (1973) found that boys received more teacher contacts, more criticism for misbehavior, but more praise for classroom work performance. Bylick and Bersoff's (1974) results also indicated that boys received more positive reinforcement than girls.

Other studies did not support these findings. For example, Martin (1972) investigated the effects of pupil sex and behavior on teacher-student interaction. Five second-grade teachers were requested to rank their students in terms of the degree to which they exhibited behavior problems. In each classroom, four boys and four girls were selected as nonbehavior problem students and an equal number of children were chosen from the list as behavior problem students. The observation system utilized was the Brophy and Good System. The observational results showed that behavior problem boys were involved in more teacher-student contacts concerning classroom procedures, student behavior and academic interaction. Boys as a group received more direct questioning than girls.

Martin concluded that teacher sex bias was not supported by this research. He suggested that the reason boys received more interactions with teachers was due to the amount of disciplinary contacts. He stated that teacher criticism was directed to behavior problem boys rather than boys in general and this type of interaction was necessary to maintain classroom control.

Polowy (1978) investigated whether day-care supervisors interacted differently with pre-school boys and girls they perceived as "behaviorally different" than with behaviorally adapted children. Eight children, two boys and two girls rated by the supervisors as behaviorally adapted and different were selected from each of the six classes. Observations of teacher-student interactions were recorded using the Brophy and Good System.

The interaction analysis results revealed that the pre-school supervisors did not interact differently with boys and girls. They did, however, provide less supportive interaction (praise, positive feedback, and nurture) to the children perceived as behaviorally different. The supervisors gave more negative feedback to the behaviorally different children. The results of this study agree with those reported by Martin (1972) in that children's sex did not bias teacher interactions.

As reported previously, Cornbleth and Korth (1980) found that teachers did not interact differently with boys and girls. Their findings also indicated that the teachers were not biased by student racial background. Black and white children received similar interactions with their teachers.

Jackson and Cosco (1974) studied the quality of educational opportunity in Southwestern United States by comparing teacher-student interactions between two ethnic groups of children. The Flanders Interaction Analysis System was used to code the interactions of 429 classroom teachers and two groups of pupils enrolled in their classes: Mexican and Anglo-American children. The purpose of the study was to determine ethnic disparities of classroom interactions.

Ten minute observations were conducted in each classroom by research observers. The analysis revealed that Anglo-American students had a higher rate of teacher-student interactions in the following categories: teacher praising or encouraging students; teacher acceptance or use of students' ideas; teacher questioning; teacher giving of positive feedback; all non-criticizing teacher talk; and, all student speaking. These results support Brophy and Good's (1974) conclusion that teachers interact differently with students of different ethnicity.

Bylick and Bersoff (1974) developed an instrument, the Positive Reinforcement Observation Schedule to record the rate, type and preference of reinforcement interactions of 30 black and 30 white teachers in their racially integrated classrooms. The results of the 30 minute observation period were analysed for reinforcement by race of teacher and race and sex of students. The overall findings indicated that both groups of teachers gave significantly more positive reinforcement responses to male than to female students. In addition, more positive reinforcement responses were given to students of the opposite racial background of the teachers. The teachers' type of reinforcement observed in the classroom interactions did not necessarily reflect their preferred reinforcement categories selected after the observations. This study showed that the teachers not only interacted differently with their two groups of students, but also, the teachers did not use the types of reinforcers they felt were most potent in increasing appropriate student behaviors.

Teacher Awareness and Behavior in the Interactive Process

Teachers, by the nature of their leadership role, have the potential to direct and alter their interactions with the students in their classes. The following studies demonstrate how aware teachers are of their interaction patterns, how teachers interact with their students and how teachers' behaviors can be changed to increase contacts and support the responses of individual students.

The results of the preceding study by Bylick and Bersoff (1974) showed that teachers did not employ the types of reinforcers they preferred when responding to their students' behaviors. The teachers appeared to be unaware of their limited use of certain types of reinforcers.

Martin and Keller (1976) specifically tested the hypothesis that teachers are unaware of the types and frequency of interactions they have with their students in the classroom environment. Thirty primary teachers and their students were observed for one school day using a modified version of the Brophy-Good Teacher-Child Dyadic Interaction System. After the observations, the teachers were requested to respond to a questionnaire that required the teachers to estimate the frequency of various interactions that they felt occurred during the observation period. The coded interactions were compared to teacher estimations and analysed descriptively using percentage agreement. Differences of greater than 10 percent were considered meaningful. Overall, the results indicated that teachers were unaware of certain interaction patterns with their students.

Good and Brophy (1974) altered teacher behaviors toward two different groups of target students by identifying specific students to the teachers and providing them with feedback about their previous interactions with these children. Teacher-student interaction observations were made in eight classes with the Brophy and Good Dyadic Interaction System. Twenty-one low participant (low rates of interactions with the teachers) and 28 extension students (low rates of successful responses) were identified from the classroom observations. Contrast students were selected on the basis of appropriate teacher interaction with these students. The teachers were requested to seek out the low participant students more often and to become more persistent in obtaining responses from the extension students.

The second observation results indicated that teachers significantly increased their contacts with these children. The amount of teacher praise given to these students was substantially greater than their interactions prior to the experimental treatment. Although the systematic feedback (treatment) provided to the teachers was simple and brief, the effects produced were significant. The teachers were able to alter their interactive behaviors in a positive manner with different target students. The students were also influenced by this change. Specifically low participant students sought out the teacher more often. Reciprocity was indicated, but the extent of this relationship was not investigated.

Attitudes

In the present study, a belief statement scale was devised to measure the teachers' strength of belief toward special needs children and their educational placement. Prior to constructing the scale, a conceptual definition of attitude was adopted. Since attitude definitions and theories are highly diverse, specific definitions and theories related to this study's measurement system are reviewed in the following section.

Nature of Attitudes

Attitude is a psychological construct often used "to predict and explain consistencies in social behavior" (Shaw and Wright, 1967, p.1). Although various definitions of the term attitude have been proposed (Greenwald, 1968), Fishbein and Ajzen (1975) state that most attitude investigators would concur with the definition that attitude is a "learned predispositon to respond in a consistently favorable or unfavorable manner with respect to a given object" (p. 6). Even though this definition may be acceptable, there are ambiguities in its interpretation. Fishbein and Ajzen describe the sources of conceptual ambiguity. The major source of concern is with the issue of "response consistency." Three types of consistency are identified: stimulus-response (Campbell, 1963), response-response (DeFleur and Westie, 1958), and evaluative (Thurstone, 1931). Stimulus-response consistency posits that if an individual makes the same response each time the stimulus object is presented, consistent behavior toward that object is established and these responses reflect an attitude. The response-response consistency position states that an attitude may be inferred when an individual's responses toward an object are in accordance with each other; the responses do not have to be the same.

Fishbein and Ajzen (1975) criticize stimulus-response and response-response consistency by stating that these two positions do not distinguish attitude from other concepts. The third type of response consistency, evaluative, considers that an individual's behavior toward an object can vary on different occasions. Yet, response consistency can exist; that is, the overall favorability expressed toward an object at various times may be consistent (p. 7). It is the "overall evaluative consistency" that distinguishes attitude from other concepts (Fishbein and Ajzen, 1975; Thurstone, 1931).

In order to obtain a measure of evaluative response consistency, an affective dimension should be used. In this way, an individual's behaviors toward an object can be considered as "consistently favorable or unfavorable." That is, two or more behaviors toward a given object can be viewed as consistent when the responses are positioned on only one side of an affective (evaluative) dimension. A favorable or unfavorable attitude is shown by the consistency in which a person responds either positively or negatively on an affective continuum (Fishbein and Ajzen, 1975).

Many researchers support the evaluative (or affective) dimension of attitude (Anderson & Fishbein, 1965; Osgood, Suci & Tannebaum, 1957; Shaw & Wright, 1967; Sorenson, 1964; Thurstone, 1931). Other theorists (Krech, Crutchfield and Ballachy, 1962), however, consider attitude to consist of three components or elements: affective, cognitive, and behavioral. Triandis (1964) conceptualizes attitude to include evaluations, behavioral intentions, and opinions. Shaw and Wright (1967) state that theorists interpret attitude to consist of conceptual, affective, and action components but they are in agreement with the other theorists who consider these components as separate and refer to the affect element as attitude.

In order to distinguish attitude from other variables, Fishbein and Ajzen (1975) classify these related concepts into four categories: "affect (feelings, evaluations), cognition (opinions, beliefs), conation (behavioral intentions), and behavior (observed overt acts)" (p. 12). They view affect to refer only to attitude. Similarly, Thurstone (1931) describes attitude as "the affect for or against a psychological object" (p. 261). Thus, attitude, as Thurstone's definition implies, has only one essential component which is affective (or evaluative).

The necessity to stress this evaluative or affective dimension leads to the means of measuring attitudes. Thurstone (1928) states that attitudes can be measured by using a scale of belief statements. He further contends that the measure of one's attitudes is "expressed by the acceptance or rejection of opinions" (p. 532). Katz (1967) purports that opinion is "the verbal expression of attitude" (p. 459). Fishbein (1967) considers the statement scale to consist of statements of belief about some attitude object. The attitude then can be abstracted from responses to these belief statements.

Beliefs

Fishbein and Ajzen (1975) consider the necessity to distinguish attitudes from beliefs and to show the relationship of beliefs in measuring attitudes. To make this distinction, their definition of attitude is similar to Thurstone's; they suggest that "attitude refers to a person's favorable or unfavorable evaluation of an object, belief represents the information he has about the object" (p. 12). Specifically, belief in an object means that the object "exists" and belief about an object suggests the probability of an association "between the object of belief and some other object, concept, value, or goal" (Fishbein, 1967, p. 259; Fishbein and Raven, 1962).

Fishbein (1967) diagrams the belief about an object as follows:

> (X) ____________ (Y), where (X) refers to the object of belief, (Y) refers to some other object or concept, and the line, i.e. __________, represents the relationship or assertion linking (X) and (Y).
>
> (p. 259)

This diagrammed representation can be used to construct a belief statement. Thus, operationally, belief refers to the "probability or improbability that a particular relationship" between the object of belief and some other concept or object exists (p. 259).

The belief about an object may be referred to as "cognitive" and "action" components. An individual may hold many different types of beliefs about an attitude object. An outline of the different types of beliefs is presented by Fishbein (1967):

> 1. Beliefs about the component parts of the object.
> 2. Beliefs about the characteristics, qualities, or attributes of the object.
> 3. Beliefs about the object's relation with other objects of concepts.
> 4. Beliefs about whether the object will lead to or block the attainment of various goals or "valued states".
> 5. Beliefs about what should be done with respect to the object.
> 6. Beliefs about what the object should, or should not, be allowed to do.
>
> (p. 259)

In the present study, the attitude object was special needs children. Using Fishbein's representation of the different types of beliefs an individual holds with respect to the attitude object, an illustration of "Beliefs about the characteristics, qualities, or attributes of the object" would be "Special needs children are passive." Another example using belief type #6 would be "Special needs children should be allowed regular class placement."

Attitudinal Components of Beliefs

Although the belief about an object may be described as cognitive, Osgood, Suci and Tannebaum (1957) consider all concepts or objects to have an evaluative component. From this viewpoint, an individual has an attitude toward all objects or concepts (Fishbein, 1967). Therefore, there are attitudinal components of belief statements. An individual has an attitude toward the belief about an object and the related object contained in the belief statement. For example, using the belief statement "Special needs children are passive," a person has an attitude toward special needs children, as well as, passive. Specifically, Fishbein and Ajzen (1975) state that "a person's attitude toward an object is related to his beliefs that the object possesses certain attributes and his evaluation of those attributes" (p. 59). A predictive formula was developed by Fishbein to determine an individual's attitude toward an object. The following formula expresses this prediction:

$$A_o = \sum_{i=1}^{n} b_i e_i$$

where

A_o = the attitude toward object "o"
b_i = the strength of belief i about o (belief that o is related to attribute* i)
e_i = the evaluative aspect of i (i.e., the evaluation of attribute i)
n = the number of beliefs

*attribute such as, characteristic, quality, object, concept value, or goal associated with the object "o" (Fishbein and Ajzen, 1975, p. 29; 223).

In applying attitude scaling procedures, the evaluation of attributes (e) are not measured. As Fishbein and Ajzen (1975) state, the evaluative aspect of the attributes (e) are assumed to be similar for all subjects responding to a particular scale (p. 61). In order to understand the relationship of the belief strength (b) and the evaluative attribute (e) components to attitude measurement, however, an application of the predictive model is presented. The following description is based on Fishbein and Ajzen's examples but changed to represent the measurement of attitudes toward "special needs children."

In order to measure a person's attitude toward special needs children, it would be necessary to determine the strength of his/her beliefs that special needs children possess specific attributes and to measure his/her evaluation of each attribute. To do this, certain attributes would be identified to form belief statements about the attitude object, special needs children. For example, the following belief statements would be constructed:

1. Special needs children have a right to mainstreamed education.
2. Special needs children are passive.
3. Special needs children have a beneficial effect on other children.
4. Special needs children impede the educational progress of others.

The attributes associated with special needs children in this example are:

1. Having a right to mainstreamed education
2. Passive
3. Having a beneficial effect on other children
4. Impeding the educational progress of others

Once these attributes are identified, the first procedure in applying the predictive model to assess a person's attitude toward special needs children would be to measure the individual's evaluation of each attribute. A rating scale, such as a seven-point "good-bad" format would be used to measure the evaluation of the attributes (e). In this case, the person rates his/her evaluation of each attribute ranging from bad (-3) to good (+3). To illustrate, a particular respondent evaluates the identified attribute, "passive" as bad and thus, scores -3 for that attribute evaluation (e).

The next procedure would involve having the subject rate each belief statement on a probability scale, such as an "improbable-probable" scale with a point range of 0 to 3. This rating would represent the strength of a person's belief that special need children possess that attribute. For example, a person who responds to the belief statement "Special needs children are passive" with belief that special needs children can be characterized as being passive, would receive a score of three which represents a strong belief (b).

After these belief strength scores (b) are obtained for each belief statement, each "b" score is multiplied by its corresponding attribute evaluation score, "e." The sum of these products serve as "an estimate of attitude."

The subjective probabilities and evaluations that might have been obtained from the described example are shown in Table 1.

Table 1

Hypothetical Attitude Toward Special Needs Children (SNC)

Belief	b	e	be
SNC have a right to mainstreamed education.	3	+3	+9
SNC are passive.	3	-3	-9
SNC have a beneficial effect on other children.	2	+3	+6
SNC impede the educational progress of others.	2	-2	-4

$$A_0 = \sum_{i=1}^{n} b_i e_i = +2$$

Based on the measurement of the person's strength of beliefs (b) and evaluation of attributes (e) as applied to the predictive formula, the results indicate that $A_0 = +2$. Therefore, it is predicted that the subject tends to hold a positive attitude toward special needs children (Fishbein and Ajzen, 1975, pp. 28-31; 59-61).

Evaluative Aspect of Beliefs

In attitude measurement scaling, a series of belief statements are formulated about the attitude object. Using Fishbein's representation of a belief statement, there are three distinct components that must be incorporated in each belief statement: the attitude object, the assertion, and the related object. In constructing a belief statement scale, the evaluation of the related object can be positive, negative, or neutral. Similarly, the assertion or association between the attitude object and the related object can be positively or negatively evaluated. From Fishbein's diagrammed representation of a belief statement, evaluative aspects of the belief statement can be composed from six different types:

1. The attitude object is positively associated with a positively evaluated concept.
2. The attitude object is positively associated with a neutrally evaluated concept.
3. The attitude object is positively associated with a negatively evaluated concept.
4. The attitude object is negatively associated with a positively evaluated concept.
5. The attitude object is negatively associated with a neutrally evaluated concept.
6. The attitude object is negatively associated with a negatively evaluated concept. (Fishbein, 1967, p. 260).

Thus, as Fishbein (1967) states, "each of these statements implies a favorable, neutral, or unfavorable attitude toward the attitude object" (p. 260). The favorableness or unfavorableness toward the attitude object is composed of the nature of the assertion and the evaluative aspect of the related concept or object.

The evaluation of each belief statement as positive (favorable) or negative (unfavorable) is referred to as belief value or item polarity.

In Likert-type scale construction, item polarity is determined by the investigator prior to its administration to a group of subjects. Each item is evaluated as positive or negative based on whether the nature of the assertion and the evaluative aspect of the related object is favorable or unfavorable. This process can be represented as follows:

> (+ or -) (+ or -)
> X ________________ Y, where X is the attitude object, the line is the asseration between the attitude object and related object to be evaluated as positive (+) or negative (-), and Y, the related object to be evaluated as positive (+) or negative (-).

Each belief statement is given a positive or negative belief value (item polarity) based on the following criteria:

Assertion	Related Object	Belief Value
(+)	(+)	+
(-)	(-)	+
(+)	(-)	-
(-)	(+)	-

The following example illustrates the method for obtaining item polarity for the belief statement "Special needs children impede the educational progress of normal children." A negative assertion (impede) and a positive evaluated concept (the educational progress of normal children) would be considered a negative statement, (-) (+) = -.

Strength of Beliefs

Once belief statements and belief values (item polarity) have been established, a specific scale format is selected to allow an individual to express his/her agreement or disagreement with each belief statement. For the purposes of this study, a Likert-type scale was constructed based on five rating choices: strongly agree, agree, uncertain, disagree, and strongly disagree. Each response selected by an individual is rated from 1 to 5 depending on the predetermined polarity of the statement. For example, strong agreement on a positive evaluated statement would score 5; whereas, strong agreement on a negative evaluated item would score 1. The total score, that is, the sum of one's responses to each item represents the degree of favorableness or unfavorableness toward the given object or class of objects. Based on Likert summation, a high total score would tend to indicate a favorable attitude; a lower overall score would tend to indicate a less favorable attitude toward the attitude object.

In a Likert-type scale, the degrees of agreement or disagreement measures the strength of an individual's beliefs that the attitude object has or has not the attributes described in the belief statements. Therefore, a five-point Likert-type scale is more a measure of strength of beliefs than attitude, since the operation utilized is assessing beliefs. The conceptual variable is attitude; the operational variable is beliefs.

As indicated previously, Fishbein views belief statements as the indicators of attitudes. Similarly, Thurstone (1928) and Katz (1967) state that opinions are expressions of attitudes. In agreement with Green (1964), Fishbein (1967) contends that an attitude may be abstracted "by considering the many beliefs an individual holds" about an attitude object (p. 264). Therefore, the overall favorableness or unfavorableness that an individual ascribes to a series of statements, that is the summation of one's responses, is considered an index of the respondent's attitude.

Attitude-Behavior Relationship

It is often assumed that there is a close correspondence between attitude and behavior. For example, the presupposition that people will behave in accordance with their expressed feelings and beliefs about a person or object is such an instance. In special education, numerous studies have assessed educators' attitudes toward varying types of special needs children and the concept of mainstreaming. An underlying premise of these studies has been that the educators' behaviors will reflect the attitudes that they have expressed on attitude scales and questionnaires (Jones, 1978, pp. 75-76). As Jones and Guskin (1984) stated:

> We seem to hold the oversimplified belief that if we feel unfavorable toward the handicapped or to their integration into society, we will act accordingly.... The assumptions discussed are not necessarily invalid, only unvalidated. (p. 11)

Social science researchers have analysed past attitude studies to determine attitude-behavior relationships. The results of these investigations have been inconsistent. For example, in an attempt to determine the strength of relation between attitude and behavior, Wicker (1969) reviewed 46 studies in which the subjects' verbal and behavioral responses to attitudinal objects or persons were obtained on different occasions. The studies reviewed varied on attitude instrumentation and attitude object and included diverse populations. The results of Wicker's analyses showed that the relationship between attitudes and overt behaviors were generally low (the product-moment correlations were rarely above .30) and inconsistent. The results of a more recent review by Schuman and Johnson (1976), however, indicated that most attitude-behavior studies yielded positive results, yet the strength of the relationships was not great enough to suggest that attitudinal verbal responses can be a substitute for behavioral measures (p. 199). In agreement, Fishbein and Ajzen (1975) have stated that "traditional measures of attitude toward an object can influence a given behavior only indirectly" (p. 382). As a result, the relationship between attitude and behavior is quite low and inconsistent. Traditional methods as defined by Fishbein and Ajzen (1975) include behavioral measures of "single-act" or "repeated-observation" criteria. The former criterion represents the single observation of a "single-act." The latter one is defined as repeated observations of the same single act (p. 352). In the case of a "single-act" criterion for obtaining an indication of attitude, the specific behavior measured may be more influenced by subjective norms than attitude. Consequently, "not every behavioral criterion can serve as a valid indicant of attitude" (p. 357).

Fishbein and Ajzen (1975) suggest using "multiple-act" criterion as a basis for measuring an index of attitude. The "multiple-act" criterion represents a single or repeated observation of different behaviors. Fishbein and Ajzen (1975) have demonstrated that measures of attitude can be obtained by using "multiple-act" criterion based on appropriate scaling procedures and properly selected behaviors. In this way, the behavioral measure will be highly correlated with the verbal measure of the same attitude (p. 357).

Based on educational literature, teacher attitudes are presumed to influence behavior and consequently, are of concern to special educators. In this study, attitude as indicated by beliefs was used as variable in order to understand its possible influence on teachers' interactive behaviors. Attitude was not used as a predictor of behavior. The verbal measures (belief statement scale) and the observed behaviors were not correspondent. The observed behaviors were selected to represent classroom interactions between the teachers and their pupils. The beliefs' measured corresponded closely to mainstreaming investigations that assessed teacher attitudes and/or concerns by means of verbal measures (e.g., scales, interviews, and questionnaires). A review of investigations that have measured teacher attitudes toward special education students and integration is presented in the next section.

Empirical Studies on Teacher Attitudes

Numerous studies have surveyed teachers' attitudes toward special education students and their feelings about integrating these children and youth in the regular class. As well, teachers' concerns about integration have been identified. The reported studies show that teachers' attitudes toward integration vary in degrees of favorableness. Generally, teachers do not hold very positive views toward integration. The studies presented, however, have surveyed different populations of teachers using various methods and techniques, and consequently, generalizability is limited.

Barngrover (1971) interviewed 16 regular class teachers to determine how they felt about special or regular class placement for mildly exceptional children. Seventy-five percent of these teachers advocated the retainment of the mildly exceptional children in special classes. Furthermore, these teachers felt it would be helpful to place their "slow" children in a special class. They also indicated that if the exceptional children were in special classes, these students would be less disruptive and would get more individual instruction. Barngrover stressed that these reasons be considered before placement decisions are made for the exceptional children.

A similar study was conducted by Gickling and Theobald (1975). Of the 230 regular class teachers surveyed, 62.1 percent of these teachers felt special classes were more effective for special education students than the regular classes.

Zawadski (1973) surveyed 158 regular class teachers to determine what they perceived as impediments to the successful education of EMR children in regular classes. Some of the major concerns expressed about integrated EMR children were: their inability to follow directions, their disruptive behaviors, their demand for and use of too much teacher's time, and their effect of hindering the progress of the nonretarded students. These teachers also indicated that their own negative attitudes toward the integrated EMR children would affect the successful integration of these children.

In order to identify specific concerns teachers have regarding the education of handicapped children in the regular class, Schultz (1982) surveyed 102 elementary teachers. An open-ended questionnaire was used to elicit these teachers' questions and/or concerns about mainstreaming. The results revealed that the teachers' main concerns were in planning for individual differences and the teachers' roles and responsibilities in educating handicapped children. The concerns of teacher and student acceptance of mainstreaming were included in the highest response categories.

Hudson, Graham and Warner (1979) surveyed elementary class teachers' attitudes and found that they were unfavorable toward mainstreaming programs. Their expressed concerns related to lack of support services, training and materials. Also, class size and time restraints were associated with less favorable attitudes.

Teacher attitudes toward physically disabled, socially and emotionally disturbed, learning disabled (LD) and educable mentally retarded (EMR) children were measured by Williams and Algozzine (1979). In addition, the researchers obtained information from the 267 teachers on the reasons why they were or were not willing to mainstream each handicapped group. The results of the survey indicated that regular class teachers were less willing to mainstream EMR and socially and emotionally disturbed children than physically handicapped and LD children. Two main reasons for unfavorable attitudes toward mainstreaming were that educating handicapped children would take too much time from the regular pupils and the teachers felt they did not have the technical skills to teach these children. In contrast, the teachers' main reasons for mainstreaming physically and learning disabled children voluntarily were based on previously successful teaching experiences with these children, and access to adequate support services and personnel.

Moore and Fine (1978) measured special education and regular class teachers' attitudes toward integrating educable mentally handicapped (EMR) and LD children. A two-part questionnaire was used to elicit the perceptions and attitudes of these teachers regarding the two groups of children. Their results indicated that the teachers perceived the EMR child as generally "docile, trusting, and dependent." Also, these children were evaluated as interacting very cooperatively in the classroom setting and apt to seek "nurturance and/or depreciation" from others. Yet, in response to mainstreaming EMR children in the regular class, half of the regular class teachers disapproved of placing EMR children into the regular class. Only 5.6% of the teachers strongly agreed that mentally retarded students "should be mainstreamed into the regular class as much as possible" (p. 257).

Smith (1979) surveyed 160 regular and 49 special class teachers in order to assess their attitudes toward mainstreaming various categories of handicapped students. For the category of borderline and educable mentally retarded, 37% of the regular class teachers and 44% of the special education teachers favored mainstreaming.

In a similar study, Vandivier and Vandivier (1981) assessed teacher attitudes toward mainstreaming learning disabled, educable mentally retarded, and emotionally disturbed students based on three levels of severity: mild, moderate and severe. Seventy-five regular class teachers were surveyed by means of a questionnaire. The results demonstrated that regular class teachers were more favorable toward mainstreaming placements for emotionally disturbed and learning disabled students than for educable mentally retarded children. There were no significant relationships found between attitudes of teachers toward mainstreaming and the variables of sex of teacher, grade-level taught, or years of teaching experience.

More positive results were obtained by Stephens and Braun (1980). They surveyed 795 regular class elementary teachers' willingness to integrate physically, emotionally and mentally handicapped children into their classes. Sixty-one percent of these teachers expressed a willingness to provide educational programs for these handicapped students. Separate analysis by exceptionality was not undertaken and therefore, may have accounted for more favorable results.

Multiple regression and chi-square analyses were performed on selected teacher variables and teachers' willingness to integrate handicapped students into their classes. The main predictors were "teachers' confidence in their ability to teach exceptional children; a belief that exceptional children are capable of becoming useful members of society; and teachers' beliefs that public schools should educate exceptional children" (p. 292).

In 1971, Blazovil surveyed 80 teachers who taught high school subjects to integrated borderline and EMR students. The results of the teacher responses indicated that these students would benefit more academically, socially and vocationally in special classes than in regular classes.

Shotel, Iano, and McGettigan (1972) administered a questionnaire to two groups of teachers: teachers in schools where resource programs were established, and teachers in schools with self-contained special class programs. The results indicated that even when regular class teachers had supportive resource services in their schools, the teachers' attitudes toward integrating EMR children were not positive. The most significant finding of this study showed that regular class teachers' attitudes changed after a year of participating in the integration of EMR children with resource services. At the beginning of the year, 37.3 percent of the regular class teachers favored integration of EMR children; however, at the end of the school year, this percentage had dropped to 13.6 percent. Regular class teachers who had EMR children in their classes continued to have negative views of these children.

To examine teachers' perceptions of mainstreaming effects, Ringlaben and Price (1981) surveyed 101 regular class teachers. Fifty-seven teachers had at least one handicapped student mainstreamed in their class. Overall, the results indicated that there were no significant relationships among the background variables examined (educational level, credits earned beyond the highest degree obtained, enrollment and type of exceptional child enrolled in class) and teachers' opinions and perceptions about mainstreaming. Forty-five percent of the teachers felt that mainstreaming was working somewhat, and approximately 30% indicated that mainstreaming was working quite well. The remaining 25% of the teachers perceived that mainstreaming in their class was "not working." Reasons for perceiving mainstreaming as being ineffective were not elicited.

Reynolds, Martin-Reynolds and Mark (1982) assessed the attitudes of 768 elementary teachers toward mainstreaming educable mentally retarded (EMR) students. Approximately 50% of these teachers had EMR students integrated in their classes. As in Ringlaben and Price's (1981) study, the results revealed that teacher demographic variables were not related to teacher attitude. The attitude results showed that teachers were accepting and positive toward mainstreaming.

Approximately 82% of the teachers, however, felt mainstreaming involved "extra work" for them.

MacMillan, Meyers and Yoshida (1978) obtained information about the perceptions of regular class teachers who had recently placed EMR children in their classes. A total of 252 teachers responed to a questionnaire. Fifty-five percent of the teachers taught low-ability classes. Seventy-three teachers felt that the EMR children affected their teaching instruction; 149 teachers indicated that the integrated EMR children did not alter the classroom instruction. The teachers who felt the impact reported that the EMR students required extra time for direct instruction and these students were perceived to cause more discipline problems for the class teacher.

In a follow-up study of the one conducted by MacMillan, Meyers and Yoshida (1978), Kavale and Rossi (1980) assessed the attitudes and perceptions of regular teachers toward the Resource Specialist Program (RSP) in California. The RSP allowed handicapped students to maintain regular class placement with support services. The results of the Kavale and Rossi (1980) study indicated that generally, teachers rated the RSP as both favorable to the handicapped students as well as to the regular class teachers. The teachers expressed concerns about limited access to materials and lack of inservice training.

The researchers felt that the reason the teachers were more favorable to the concept of mainstreaming than two years earlier (MacMillan, Meyers and Yoshida, 1978) was that these teachers had more time to adjust to the RSP. Direct comparisons between the studies, however, may not be appropriate because many of the pupils identified as EMR, in fact, were misdiagnosed. It may have been that the students were more appropriately placed in the regular class and consequently, the children adjusted over the two year period, not the teachers.

Childs (1981) assessed mainstreaming attitudes and opinions of 200 regular class teachers of integrated EMR children. A 14-item questionnaire was constructed to elicit "yes" or "no" responses to questions about mainstreaming EMR children.

In contrast to Kavale and Rossi (1980), the results of Childs' study indicated that 62% of the teachers held negative attitudes toward mainstreaming. Essentially, the teachers did not support the concept of mainstreaming EMR children. The researcher stated that the reasons for the negative attitudes were reflected in the teachers' responses to other items in the questionnaire. Teachers felt that they lacked adequate preparation to teach these children, and resource and consultive services were not available to them. These reasons were not supported statistically. Thus, teachers who responded positively to the concept of mainstreaming, also could have responded negatively to other items in the questionnaire.

Graham, Hudson, Burdg and Carpenter (1980) examined regular and resource room teachers' attitudes and perceptions toward the mainstreamed programs operating in their schools. Also, they surveyed the teachers' perceptions of their effectiveness, competency and ability to communicate. One hundred and forty-four regular class teachers and twenty-three resource room teachers responded to a Likert-type questionnaire. The results revealed that the regular class teachers felt handicapped pupils received an effective educational program in their class. The resource room teachers disagreed. Both groups of teachers agreed that handicapped children should be mainstreamed even though they limit the progress of other pupils. As other studies have demonstrated, however, the regular class teachers were concerned about the adequacy of their skills in teaching handicapped children.

Summary

Most studies reviewed have found that regular class teachers' attitudes are generally less favorable toward mainstreaming special education pupils, particularly, mentally retarded students. Studies conducted to investigate the attitudes of regular class teachers who were involved in the mainstreaming process have presented conflicting results. Blazovil (1972), Childs (1981), and Shotel, Iano and McGettigan (1972) have found that teachers with direct mainstreaming experience still hold less favorable attitudes. In contrast, Kavale and Rossi (1981), MacMillan, Meyers and Yoshida (1978), Reynolds, Martin-Reynolds and Mark (1982), and Ringlaben and Price (1981) have found that the teachers in their studies were more accepting and positive toward mainstreaming. In agreement, the teachers in Graham, Hudson, Burdg and Carpenter's (1980) study were more favorable toward the concept of mainstreaming but expressed areas that were presently unsatisfactory in their own mainstreamed situation.

One of the major problems in generalizing from any of these results is that the type of special education student and amount of time they were mainstreamed, as well as the auxiliary services available to the pupils and regular class teacher, if even reported, varied amongst the studies. MacMillan, Meyers and Yoshida (1978) identified this research problem even within studies.

The reasons regular class teachers were unfavorable varied among the studies. The major apprehensions expressed about integrating educable mentally retarded children were that these pupils: demand excessive teacher-time; hinder the progress of other pupils; and exhibit disruptive behaviors. Additional expressions of concern included lack of support services, materials, and the technical skills to teach EMR children.

There is supportive evidence that attitudes and expectations influence teachers to interact differently with different students (Brophy and Good, 1970; Chapman, Larsen and Parker, 1979; Cornbleth, Davis and Burton, 1974; Everston, Brophy and Good, 1973; Jeter and Davis, 1974; Martin, 1972; Polowy, 1978; Silberman, 1969; Willis, 1970). The results of these studies based on teacher expectations have shown that teachers interact differently between children they perceive as being high and low achievers, or behaviorly adapted or nonadapted. Thus, in analysing teacher behaviors, teachers tend to interact with students differently based on their expectations of student performance.

Based on the results of their studies, Martin and Keller (1976) and Brophy and Good (1974) concluded that teachers are generally unaware of the types of interactions operative in their classrooms. The teachers participating in the studies expressed an interest in improving relationships with their students. These investigators identified specific teacher behaviors in the interactive classroom process by using observational techniques and feedback to the teachers.

In conclusion, observational studies have indicated that teachers interact differently with their students. Dusek (1975) suggested that "teacher's differential behavior toward students in the classroom may reflect effective teaching-style differences for students with differing needs" (p. 680). Dusek's analysis and the studies by Martin and Keller (1976) and Brophy and Good (1974) provided the basis for the intent of the present study. Namely, this investigation was conducted to determine whether teachers interact differently with special needs and nonspecial needs children and whether teachers' stated attitudes as indicated by their beliefs toward integration relate to their behavior toward special needs pupils. Direct classroom observation was utilized to identify specific teacher and student behaviors that may improve teacher-pupil relationships within the integrated classroom. Through this process, the special needs pupils' functioning within the regular class environment may be enhanced.

CHAPTER III

INSTRUMENTS

Since the major purpose of this study was to compare the quality of teacher-pupil interactions between special and nonspecial needs children, an interaction analysis system was selected, pilot-tested and then modified. In addition, dependent variables were formulated from the modified system. Descriptions of the observation system, the pilot study, the modifications made to the observation system and the formation of the dependent variables are presented in the first section of this chapter. Next, the development of the belief statement scale is described. This instrument was designed to measure teachers' stated attitudes as indicated by their beliefs about special needs children and integration. Three questionnaires were developed to obtain information about the teachers and pupils participating in the study as well as the pupils' educational programs. These instruments are described in the last section.

Description of the Brophy-Good System

As reviewed in Chapter II, various observation schemes were examined. The Brophy-Good Teacher-Child Dyadic Interaction System (1969) was selected for this study because it provides for recording the quantity and quality of interactions between the teacher and individual pupils in the natural classroom environment. In addition, this observation system has been modified and successfully used by many researchers (Alpert and Hummel-Rossi, 1976; Chapman, Larsen, and Parker, 1979; Cornbleth and Korth, 1980; Good and Brophy, 1970; 1972; 1973; Martin, 1972; Martin and Keller, 1976; Polowy, 1978) to examine the diversity of teacher-student interactions between the teacher and selected pupils.

The Brophy-Good System was devised to record and analyse every teacher interaction with each child in the classroom (Brophy and Good, 1969; Brophy and Good, 1974; Good and Brophy, 1970). These interactions are recorded in terms of the quality of the contact (how the teacher interacts with the pupil) and the quantity of the contacts (the frequency of the teacher interactions with the pupil). Each dyadic contact and the sequential nature of the interaction are coded in one of the five classroom situations that distinguishes school-related work. The school related areas are:

> Response opportunities, in which the child publicly attempts to answer a question posed by the teacher.
> Recitation, in which the child reads aloud, describes some experience or object, goes through arithmetic tables, or makes some other extended oral presentation.
> Procedural contacts, in which the teacher-child interaction concerns permission, supplies and equipment, or other procedural matters concerned with the child's individual needs or with classroom management.
> Work-related contacts, in which the teacher-child interaction concerns seat work, homework, or other written work completed by the child.
> Behavioral contacts, in which the teacher disciplines the child or makes individual comments concerning his classroom behavior.
>
> (Brophy and Good, 1969, p. 5)

These areas are divided into categories which provide distinct behavior codings for question, answer, and/or feedback responses. These categories are described as follows for each area.

Response Opportunities

Within response opportunities, there are four areas of descriptive interaction categories: types of question, level of question, child's responses (answers), and teacher feedback reactions.

Types of questions. Four types of questions that the teacher can address to the pupils are: 1) direct questions (the teacher calls on a particular child who has not shown any desire to respond); 2) open questions (the teacher calls on a particular child who has indicated a desire to respond, i.e., child raises hand); 3) call-outs (a child calls-out the answer before the teacher is able to select a respondent); and 4) discipline questions (a teacher calls on a particular child as a technique to control the pupil's attention).

Levels of questions. The level of question refers to the type of response expected from the pupil. The four levels identified and defined are: 1) process questions, which require the pupil to explain the answer to the teacher's question in detail; 2) product questions, which require the child to respond with a short factual answer; 3) choice questions, which require the child to choose from teacher presented or implied alternatives; and 4) self-reference questions, which require the child to give a personal and/or nonacademic response.

Child's response. The quality of the child's response indicates whether the pupil's answer to the teacher's question is correct, partially correct, incorrect, or no response.

Teacher feedback reactions: terminal and sustaining feedback. Immediately after the child responds to a question or recites, teacher terminal feedback reactions are recorded in the following categories as defined in the Brophy-Good System (1969) manual.

1. Praise refers to the teacher's evaluative reactions which go beyond the level of simple affirmation or positive feedback by verbally complimenting the child ("Good," "Fine," and "Wonderful," etc.) and/or by accompanying verbalization of positive feedback with expressions or gestures connoting excitement or warmth (p. 23).

2. Affirmation is coded when the teacher indicates that the child's response is correct or acceptable. He may do this verbally ("Yes," "That's right," "Okay," etc.) or nonverbally (shaking his head up and down) (p. 23).

3. No feedback occurs when the teacher makes no response whatever following the child's answer to the questions (p. 24).

4. Ambiguous: The teacher reflects the child's answer in a quizzical tone ("You think it's blue?") or in some other way acknowledges his answer but fails to indicate whether or not it is acceptable (p. A5).

5. Expands: The teacher expands the child's answer into a sentence. She doesn't add any new information; she merely adds the linguistic component necessary to make the child's answer into a complete statement. (Teacher: "What color is this?" Child: "Blue." Teacher: "Yes, this color is blue.") (p. A5).

6. Extends: The teacher accepts the child's response and then adds new information to it by relating it to other aspects in the

context of the discussion or by carrying forward a line of reasoning. ("Yes, it is blue. And this one here is blue too.") (p. A5).

7. Process feedback: The teacher verbalizes the chain of logic or the cognitive processes through which one goes in order to arrive at the answer which the child has just given (p. A5).

8. Give the answer: The teacher gives the answer to the child (p. A6).

9. Ask other: The teacher asks the class as a group or some other individual child to supply the answer (p. A6).

10. Call out occurs when some other child calls out the correct answer when the first child gives an incorrect answer or is unable to respond (p. 86).

11. Negation: The teacher says "No," "That's not right," or some other verbal negation, or she nods her head negatively (p. A6).

12. Criticism refers to negative teacher evaluative reactions that go beyond the level of simple negation by expressing anger or personal criticism of the child in addition to indicating the incorrectness of his response. The category includes obvious verbal criticism ("That's a stupid answer," "What's the matter with you?" "If you'd pay attention, maybe you'd get it right.") and verbal negation which is accompanied by expressive or gestural communication of hostility, anger, disgust, or sheer frustration (p. 25).

If the child answers a question part-correctly, incorrectly or with no response, then the teacher has the opportunity to sustain the contact with that pupil by providing the individual with one or more sustaining feedback reactions. The teacher may repeat the question;

rephrase the question or give a clue; and/or ask the child a new question. After a correct response, the teacher may continue the contact with a particular child by asking the child a new question.

Recitations

Within recitations, there are three types of opportunities.

Self-recitations. The child gives an extended verbal presentation of a nonacademic nature (e.g., "Show-and-Tell").

Work recitations. The pupil gives an extended oral presentation of an academic nature but excluding reading turns (e.g., reciting a poem).

Reading turns. The child reads an extended passage and is being evaluated specifically on his/her reading performance.

Procedural and Work-Related Contacts

The contacts in these categories are coded depending upon who initiated the contact: the teacher (Teacher Afforded) or the child (Child-Created). Teacher responses or reactions are defined as in response opportunities and include: praise, process, positive feedback, negative feedback (negation), criticism, no feedback, and contact responses unknown (when the observer cannot hear the teacher responses).

Behavior Contacts

In this category, the teacher responds to an individual child's classroom behavior. These responses may occur any time during instruction and seat work periods but the reactions and comments must be directed to the child's general, not academic behavior. The teacher's reactions include comments that are evaluated in the categories of : praise, warnings (impersonal responses that the child's overt behavior is inappropriate), and criticism.

Reliability and Validity

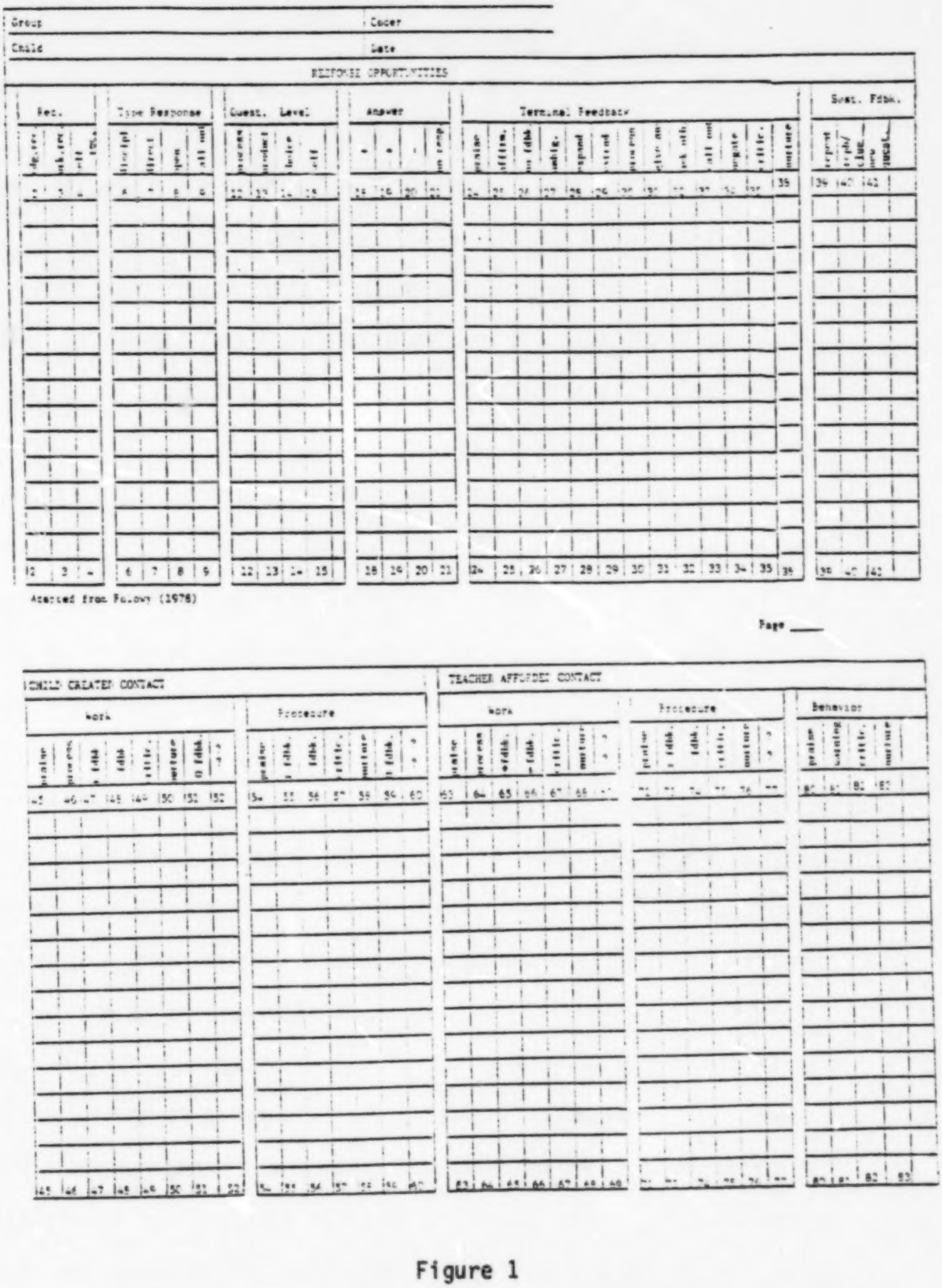
The procedures for obtaining and maintaining reliability are described in the manual (Brophy and Good, 1969, p. 102-105). Reliability of the instrument is established by intercoder agreement of at least 80 percent. Since this instrument involves the objective coding of observable behaviors, the developers have reported that validity is insured if instructions and procedures for recording interactions are followed according to the manual (p. 104).

Pilot Study of the Brophy-Good System

The purpose of the pilot study was to determine the validity of the Brophy-Good System in coding teacher-child dyadic interactions in integrated regular classrooms. The pilot study was conducted in an elementary regular class where two identified special needs children were integrated. All teacher-pupil interactions within the classroom were observed by the researcher and recorded on video-tape. The full day observation and tape were coded using the Brophy-Good System form. The coded data were analysed and modifications were made to allow for precise delineation of teacher feedback responses before the final investigation was initiated.

The modified version of the Brophy-Good System is presented in Figure 1. The changes were based on the manual instructions, Polowy's (1978) study, and analysis of the pilot study video-tape. The modifications included the addition of nurture as a teacher feedback response, and the insertion of extra coding response categories to distinguish the quality of teacher feedback such as ambiguous, expand, extend, and no feedback in response opportunity, and positive and negative feedback in procedural and work-related contacts. These changes were implemented as recommended by the authors of the system to allow for a more precise means to answer various research questions. As Brophy and Good (1969) stated, the system "*should not be conceived as a finished, closed system to be used without modifications*" (p. 4).

As shown in Figure 1, a total of 63 categories are listed under the three main headings of Response Opportunities, Child Created Contact and Teacher Afforded Contact. Nineteen categories were added to the original Brophy-Good System (1969). All of the additional categories except "nurture" were defined in the manual. The nurture category was included in the modified version in order to distinguish a teacher feedback response that was supportive to the child even though the pupil's answer was incorrect. Also, Moore and Fine (1978) described the EMH child as being able "to pull nurturance" from peers and teachers. Therefore, in this study "nurture" was included in the Brophy-Good System and defined as encouraging and/or supportive comments made by the teacher (e.g., "That was a good try." "I know you can answer this question, just take your time." "...but you did try hard.").



Group

Coder

Child

Date

RESPONSE OPPORTUNITIES

Rec.

Type Response

Quest. Level

Answer

Terminal Feedback

Sust. Fdbk.

Adapted from Fulowy (1976)

Page ____

CHILD CREATED CONTACT

Work

Procedure

TEACHER AFFORDED CONTACT

Work

Procedure

Behavior

Figure 1

Modified Brophy-Good Teacher-Child Dyadic Interaction System Coding Sheet

Formation of Variables and Clusters

Brophy and Good (1969) described different procedures for recording and combining data to derive scores from the raw coding. Although they have made recommendations, "the exact procedures used in a given investigation for recording and combining data must be dictated by the logic of the problem under study..."(p. 95). The first procedure, establishing categories for recording data, was described earlier and represented in Figure 1. Sixty-three categories were identified. The second procedure involved combining the categories to form dependent variables. In the present study, the 63 categories for coding were combined to form 48 dependent variables clustered into 10 sets, as shown in Tables 2 and 3. The variables were clustered according to similar types of interactions (see Table 2) or contacts (see Table 3) for descriptive purposes, and to answer the specific research questions. The praise, positive, nurture, negative and critical feedback clusters, shown in Table 2, represent teacher feedback responses given to the pupils during response opportunities, work, procedural and behavioral interactions. The informative cluster consists of teacher feedback response variables that are considered informative in nature. They include interactions where the pupils received additional information from the teacher about a question or answer. The no feedback variables were clustered as neutral because it is difficult for an observer to determine if no feedback from the teacher after a child answers a question is perceived by the child as being reinforcing or critical. As shown in Table 3, the variables listed in the three clusters represent the type of teacher question, teacher afforded contact and child created contact.

MELIORATIVE

PRAISE (Cluster I)

1. Praise/Response Opportunity
2. Praise/T Aff* Work
3. Praise/T Aff Procedure
4. Praise/Behavior
5. Praise/C Cre* Work
6. Praise/C Cre Procedure

POSITIVE FEEDBACK (Cluster II)

7. Pos Fdbk/Response Opp
8. Pos Fdbk/T Aff Work
9. Pos Fdbk/T Aff Procedure
10. Pos Fdbk/C Cre Work
11. Pos Fdbk/ C Cre Proc

NUTURE (Cluster III)

12. Nurture/Reponse Opp
13. Nurture/T Aff Work
14. Nurture/T Aff Proc
15. Nurture/Behavior
16. Nurture/C Cre Work
17. Nurture/C Cre Procedure

INFORMATIVE

INFORMATIVE (Cluster IV)

18. Sustaining Fdbk/Response Opp
19. Extend/Response Opp
20. Give Answer/Response Opp
21. Process Fdbk/Response Opp
22. Process Fdbk/T Aff Work
23. Process Fdbk/C Cre Work

NEUTRAL

NEUTRAL (Cluster V)

24. No Feedback/Reponse Opp
25. No Feedback/C Cre Work
26. No Feedback/C Cre Procedure

PEJORATIVE

NEGATIVE FDBK. (Cluster VI)

27. Negate/Response Opp
28. Neg Fdbk/T Aff Work
29. Neg Fdbk/T Aff Procedure
30. Ask Other/Response Opp
31. Warning/Behavior
32. Neg Fdbk/C Cre Work
33. Neg Fdbk/C Cre Procedure

CRITICAL (Cluster VII)

34. Criticism/Reponse Opp
35. Crit/T Aff Work & Proc
36. Criticism /Behavior

*T Aff-Teacher Afforded
C Cre-Child Created

Table 2

Variables for Teacher Responses

TEACHER

TYPE OF RESPONSE OPPORTUNITY (Cluster VIII)

38. Direct Question/Response Opportunity
39. Open Question/Response Opportunity

TEACHER AFFORDED CONTACTS (Cluster IX)

40. T Aff Response Opportunity/Total Contacts
41. Recitation/Total Contacts
42. T Afforded Work/Total Contacts
43. T Afforded Procedure/Total Contacts
44. T Aff Work/T Aff Work & Procedure
45. Behavior/Teacher Afforded

CHILD

CHILD CREATED CONTACTS (Cluster X)

46. C Cre* Work & Procedure/Total Contacts
47. C Cre Work/C Cre Work & Procedure
48. C Cre/C Cre & T Aff* Work & Procedure

*C Cre-Child Created
T Aff-Teacher Afforded

Table 3

Variables for Created Contacts

Validation of Variables

The 48 variables identified were validated as follows. First, the variables were formulated based on Brophy and Good's (1969) recommendations and studies using the Brophy-Good System or a modified version of the system (e.g., Brophy and Good, 1969; Chapman, Larsen and Parker, 1979; Polowy, 1978). Second, the clustered variables were distributed to five judges: a special class teacher; an elementary school teacher; two special education professors; and, a school district special education director. The judges were requested to validate the variables and clusters based on the modified Brophy-Good System and the research questions of the present study. This procedure was followed as recommended by Brophy and Good (1969). The judges agreed unanimously to the variables and clusters presented in Tables 2 and 3.

Percentage Scores

From the 48 dependent variables, scores were derived for subsequent analysis. Two types of data scores can be used with the Brophy-Good System: frequency and percentage scores. The percentage scores were selected for use. These scores were recommended by Brophy and Good (1969) 1) to obtain qualitative data on teacher-child interactions (p. A12); 2) to maintain the sequence of interactions in analysis (p. 98), and, 3) to compare teacher-pupil interactions with different types of pupils (p. 98).

To obtain percentage scores, a formula was derived for each of the 48 variables "by using a subset as the numerator and including in the denominator the numerator itself plus other numbers of the set which is under consideration" (Brophy and Good, 1969, p. A16). The percentage score formula for each variable derived is listed in Table 4. The percentage score formula of Variable 1 - Praise in Response Opportunity, for example, was obtained by coding the praise category (#24 on the modified Brophy-Good System, see Figure 1) in the numerator and the correct answer category (#18) in the denominator. After collection of the observation data, the coded frequencies observed in these two categories are converted to proportions using this part/whole percentage procedure (Brophy and Good, 1969). The resulting percentage score indicates the percent of praise given by the teacher to an individual child after correct answers in response opportunities.

Development of A Survey of Beliefs About Special Needs Children and Their Educational Programs

Because of the lack of standardized instruments to assess regular class teacher attitudes toward the integration of special needs children as defined in this study, a belief statement scale was developed. The instrument, A Survey of Beliefs About Special Needs Children and Their Educational Programs, was designed to measure teacher attitudes as indicated by their beliefs toward the integration of special needs children into the regular class. The stages of development were: 1) a review of the literature which included studies of educators' attitudes and concerns regarding the mainstreaming of special needs children and an assessment of the scales used in these investigations; 2) solicitation of regular and special class teachers'

Table 4

Dependent Variable Formulae

Variable	Proportion[a]
Cluster I - PRAISE	
1. Praise in Response Opportunity	$\frac{24}{18}$
2. Praise in T[b] Afforded Work Contact	$\frac{63}{63-68}$
3. Praise in T Afforded Procedural Contact	$\frac{72}{72-76}$
4. Praise in Behavioral Contact	$\frac{80}{80-83}$
5. Praise in C[c] Created Work Contact	$\frac{45}{45-51}$
6. Praise in C Created Procedural Contact	$\frac{54}{54-59}$
Cluster II - POSITIVE FEEDBACK	
7. Positive Feedback in Response Opportunity	$\frac{25,28}{18}$
8. Positive Fdbk T Afforded Work Contact	$\frac{65}{63-68}$
9. Positive Fdbk T Afforded Procedural Contact	$\frac{73}{72-76}$
10. Positive Fdbk C Created Work Contact	$\frac{47}{45-51}$
11. Positive Fdbk C Created Procedural Contact	$\frac{55}{54-59}$
Cluster III - NURTURE	
12. Nurture in Response Opportunity	$\frac{36}{12-15}$
13. Nurture T Afforded Work Contact	$\frac{68}{63-68}$
14. Nurture T Afforded Procedural Contact	$\frac{76}{72-76}$
15. Nurture in Behavioral Contact	$\frac{83}{80-83}$

Table 4 - Continued

Variable	Proportion[a]
16. Nuture C Created Work Contact	$\frac{50}{45-51}$
17. Nurture C Created Procedural Contact	$\frac{58}{54-59}$
Cluster IV - INFORMATIVE FEEDBACK	
18. Sustaining Fdbk in Response Opportunity	$\frac{39-41}{19-21}$
19. Extend in Response Opportunity	$\frac{29}{19-21}$
20. Give Answer in Response Opportunity	$\frac{31}{19-21}$
21. Process in Response Opportunity	$\frac{30}{19-21}$
22. Process in T Afforded Work Contact	$\frac{64}{63-68}$
23. Process in C Created Work Contact	$\frac{46}{45-51}$
Cluster V - NEUTRAL	
24. No Feedback in Response Opportunity	$\frac{26}{12-15}$
25. No Feedback C Created Work Contact	$\frac{51}{45-51}$
26. No Feedback in C Created Procedural Contact	$\frac{59}{54-59}$
Cluster VI - NEGATIVE FEEDBACK	
27. Negate[d] in Response Opportunity	$\frac{34}{19-21}$
28. Negative Fdbk in T Afforded Work Contact	$\frac{66}{63-68}$
29. Negative Fdbk T Afforded Procedural Contact	$\frac{74}{72-76}$
30. Ask Other in Response Opportunity	$\frac{32}{5-8}$

Table 4 - Continued

Variable	Proportion[a]
31. Warning in Behavioral Contact	$\frac{81}{80\text{-}83}$
32. Negative Fdbk C Created Work Contact	$\frac{48}{45\text{-}51}$
33. Negative Fdbk C Created Procedural Contact	$\frac{56}{54\text{-}59}$
Cluster VII - CRITICAL FEEDBACK	
34. Criticism in Response Opportunity	$\frac{35}{19\text{-}21}$
35. Criticism T Aff Work & Proc Contact	$\frac{66,74}{63\text{-}68,\ 62\text{-}76}$
36. Criticism in Behavioral Contact	$\frac{82}{80\text{-}83}$
37. Crit. C Created Work & Procedural Contact	$\frac{49,57}{45\text{-}51,\ 54\text{-}59}$
Cluster VIII - TYPE OF RESPONSE OPPORTUNITY	
38. Direct Question in Response Opportunity	$\frac{7}{6\text{-}9}$
39. Open Question in Response Opportunity	$\frac{8}{6\text{-}9}$
Cluster IX - TEACHER AFFORDED CONTACTS	
40. T Afforded Response Opportunity in Total[e]	$\frac{6\text{-}9}{\text{TOTAL}}$
41. Recitation in Total	$\frac{2\text{-}4}{\text{TOTAL}}$
42. Teacher Afforded Work Contacts in Total	$\frac{63\text{-}69}{\text{TOTAL}}$
43. T Afforded Procedural Contacts in Total	$\frac{72\text{-}77}{\text{TOTAL}}$
44. T Aff Work in T Aff Work & Procedural	$\frac{63\text{-}69}{63\text{-}69,\ 72\text{-}77}$
45. Behavioral Contacts in T Aff Contacts	$\frac{80\text{-}83}{2\text{-}4,6\text{-}9,63\text{-}69,72\text{-}77,80\text{-}83}$

Table 4 - Continued

Variable	Proportion[a]
Cluster X - CHILD CREATED CONTACTS	
46. C Cre Work & Procedural in Total	$\frac{\text{45-52, 54-60}}{\text{TOTAL}}$
47. C Cre Wk in C Cre Wk & Proc Contacts	$\frac{\text{45-52}}{\text{45-52, 54-60}}$
48. C Cre in C Cre & T Aff Wk & Proc Contacts	$\frac{\text{45-52, 54-60}}{\text{45-52,54-60,63-68,72-77}}$

[a] Proportion numbers correspond to categories listed on coding sheet (see Figure 1).
[b] Teacher
[c] Child
[d] Negate responses followed by informative or positive responses were not coded in the Negative Cluster.
[e] Total = 2-4, 6-9, 45-52, 54-60, 63-69, 72, 77, 80-83

concerns about integration; 3) devising a Likert-type scale based on Fishbein's attitude theory (see Chapter II) which incorporated items reflecting solicited teachers' concerns, reviewed research, and two attitude instruments (Larrivee and Cook, 1979; Siperstein, 1978; Siperstein, Note 1); 4) judgement of a team of educators; and, 5) two pilot tests of the instrument.

The initial phase in the development of the instrument involved a survey of the literature. Studies in which investigators assessed teachers' attitudes and elicited teacher concerns about special needs children and integration were reviewed (see Chapter II). In addition, the attitude instruments used by Davis (1978), Larrivee and Cook (1979), Parish, Dyck and Kappes (1979) and Siperstein (1978) were examined.

After this review, eight regular class and four special education teachers were requested to identify their concerns about integration. All of these teachers taught elementary school and were enrolled in an undergraduate education course. The concerns listed by these teachers were similar to ones identified in the review of literature.

Following the review of literature and identification of teacher concerns about integration, the attitude instrument was constructed. In forming the belief statements used in the instrument, Fishbein's attitude theory and Likert's scaling techniques were incorporated. The following description explains the procedures utilized in designing the instrument.

Using special needs children as the attitude referent, the statements of concern, and assertions described in other scales

(Larrivee and Cook, 1979; Siperstein, 1978), 38 belief statements about special needs children and their educational placement were composed (see Appendix A). The belief statements were formulated in accordance with Likert's (1967) recommendations in constructing a scale. The following outlines Likert's criteria:

> 1. It is essential that all statements be expressions of desired behavior not statements of fact.
> 2. The second criterion is the necessity of stating each proposition in clear, concise, straightforward statements.
> 3. In general it would seem desirable to have the questions so worded that the modal reaction to some is more toward one end of the attitude continuum and others more in the middle or toward the other end. (p. 90-91)

For the purposes of the present study and in agreement with Likert's criteria, assertions between the attitude object and related object for each belief statement were expressions of desired behavior, not factual behavior. As suggested by Likert, the term "should" was often used to assure that the statement expressed desired behavior. The statements were stated concisely and any words that might have been considered ambiguous were defined on the scale's direction sheet.

For each statement, a five-point Likert response scale was adopted: strongly agree, agree, uncertain, disagree, and strongly disagree following Fishbein and Ajzen (1975) and Likert (1967). The 38 statements were devised to represent a continuum of these responses as Likert (1967) recommended.

> To avoid any space error or any tendency to a stereotyped response it seems desirable to have different statements so worded that about one-half of them have one end of the attitude continuum corresponding to the left or upper part of the reaction alternatives and the other half have the same end of the attitude continuum corresponding to the right or lower part of the reaction alternatives. (p. 91)

As well, approximately half of the statements included in the scale were rated as positive; the others were rated as negative (see Appendix B). Item polarity and the degree of each belief statement attribute's positive or negative position on the response scale were verified by two regular class teachers, two special class teachers and two special education professors. Upon completion of this verification, two special education professors, a director of special education in a school district and a special class teacher, all knowledgeable about integration, validated the content of the belief statement scale.

Pilot Studies

As previously described, 38 items were developed to form the first pilot scale (see Appendix A). Twenty regular and 16 special education teachers enrolled in two graduate courses were administered the pilot scale. The LERTAP computer program (Nelson, 1974) was used for the analysis. The lowest possible score on the scale was 38 and the highest was 190. The range of scores for the 36 teachers was from 86 to 154 with a mean of 115.44 and a standard deviation of 14.24. The Hoyt's (1941) estimate of internal consistency was .84. After reviewing the item-test correlations, the instrument was revised. A 39 item scale consisting of 11 original, 16 revised and 12 new items resulted from this analysis (see Appendix C).

The second scale was pilot-tested with 17 regular class teachers enrolled in a research methods course. The lowest possible total score on the 39 item scale was 39 and the highest possible overall score was

195. The results of the LERTAP computer program indicated that the range of scores for the 17 teachers was from 66 to 146 with a mean score of 112.18 and a standard deviation of 23.36. The internal consistency of the scale was .95. Review of the item-test correlations led to the deletion of one item (number 4) to form the final 38 item scale which was used to measure teacher attitudes in the main study (see Appendix D).

Teacher Professional Data

To obtain descriptive information on teacher characteristics, the Teacher Professional Data form was devised (see Appendix E). The demographic information requested on the Teacher Professional Data form included age, teaching experience, educational background, and special education preparation.

Pupil Demographic Data

The Pupil Demographic Data form solicited descriptive information from teachers about their pupils and programs (see Appendix F). Information was obtained from the teachers on class size, pupils receiving learning assistance and/or special class services, ages of pupils participating in the study, and teacher perceptions of these pupils' social and personal adjustment and current functioning in reading and arithmetic.

Teacher Questionnaire Regarding Integrated Special Needs Children

A 27-item questionnaire was constructed to obtain information from teachers about their special needs pupil's placement and programs. In addition, teacher perceptions of the integration process were requested. These items asked teachers to respond to various aspects of classroom instruction such as the types of feedback given to special needs pupils and their ability and preparation to teach these children. Most responses were in a checklist or yes-no format; comments and explanations were also solicited (see Appendix G).

The questions related to integration on the Teacher Questionnaire Regarding Integrated Special Needs Children as well as the biographic and demographic variables on the two data forms were selected based upon past research studies on mainstreaming. Additional questions were devised for the Teacher Questionnaire Regarding Integrated Special Needs Children in order to obtain the teachers' perceptions about their interaction patterns with special needs pupils. These questions were adopted from the Brophy-Good System and types of teacher feedback that have been effective with low ability students (Brophy and Good, 1974).

CHAPTER IV

SAMPLE, DATA COLLECTION AND ANALYSIS

The primary purpose of this study was to compare regular class teachers' interactions with special and nonspecial needs children. As described in the previous chapter, a modification of the Brophy-Good System was used to record and analyse teacher-pupil interaction patterns. In addition, a belief scale, A Survey of Beliefs About Special Needs Children and Their Educational Program, was developed in order to examine whether teachers' stated attitudes were related to their interactive behaviors.

In this chapter, the methodology used to obtain the data for interaction and attitude analyses is described. First, the procedures for identifying and selecting the teacher and pupil samples are presented. Next, the methods used for training the observers and establishing coder reliability are reported. The procedures for data collection, preparation and analysis are described in the last sections.

Identification of Special Needs Children

Prior to sample selection, it was necessary to first identify special needs children who were integrated in the regular class for at least half of the school day. The two tasks involved in identification were locating children who were defined as borderline or educable mentally retarded by their school districts and then determining the amount of time they were enrolled in the regular class.

Introductory letters explaining the investigation were sent to six suburban school districts (see Appendix H). After permission for identification was granted from the school districts, the directors of special education services were contacted and asked to assist in the identification process. Since the identification of special needs children varied among the six school districts, each director described his/her school district's procedures. In all six school districts, the terminology of educable mentally retarded was not used. The children who received special services in these districts were identified as special children, not categorically labeled. Also, the districts did not use IQ scores as a criterion for pupils to receive special services. Five of the districts would not give permission for individual intelligence testing. Consequently, five of the six special education directors agreed to initially survey the special children in their district in order to determine the number of children whom they felt most closely represented special needs children as defined in this study. The other special education director did not participate in the identification process because the pupils in his school district were not identified as special children if they were enrolled in the regular class. All special needs pupils were placed in special classes. Therefore, this district did not fulfill the criterion of integration in the regular class for at least half of the school day, and was dropped from the study.

The special education directors in the remaining five districts reported a total number of 40 children identified from their survey. These pupils were identified at the school district level as having special needs. The children had learning problems more severe than children who received short-term remediation by a learning assistance, reading enhancement or remedial teacher. The special needs pupils were receiving part-time special class or learning assistance services in their school and the teachers of these children assessed them as being slow learning, low ability and/or special class pupils. All of the children were integrated in regular class but their program of instruction was modified in some or all academic subjects. In one school district, however, the four identified pupils had only recently been placed in a regular class. Consequently, they did not qualify for the study.

Before the 36 children's names were identified, the four special education directors sought district and school principal consent for participation in the main study. After approval was granted, the school principals were contacted and the regular class teachers of the special needs pupils were interviewed. Also, permission was given to obtain information from school records to insure that these children were identified as special needs pupils by the school and teacher. Program schedules were reviewed to check the amount of time the children were integrated in the regular class and teachers were asked whether or not they perceived that these pupils were functioning as borderline or educable mentally retarded.

After this assessment, another school district had to be disqualified because the identified children were integrated for less than half of the school day. In the remaining school districts, twelve pupils did not meet the criteria for inclusion in the study. Specifically, seven special needs children were described as learning disabled by their teachers and principals and five pupils were enrolled in regular classes for less than half of the school day. Consequently, 16 special needs children in 16 regular classes were identified within the three school districts.

Samples

As described, personnel in three school districts, herein, labeled Districts A, B, and C, assisted in identifying the special needs children and their teachers for the study. The three suburban school districts were located in the Greater Vancouver area of British Columbia. The community populations of Districts A, B, and C were 95,694, 74,692, and 136,494, respectively (Statistics Canada, 1982). These districts are located in residential areas with community businesses and trade and manufacturing industries. The average income of the people in each community was $15,951 for District A, $16,567 for District B, and $14,506 for District C (Statistics Canada, 1982). The school population was 18,493 in District A, 18,442 in District B, and 21,057 in District C (Ministry of Education, 1981).

Teachers

The 16 regular class teachers who had an identified special needs pupil enrolled in their class were sent an introductory letter in which the study was described and their cooperation sought (see Appendix I). All 16 elementary teachers contacted volunteered to participate in the study and granted permission for scheduled observations in their class. Twelve teachers were female; four were male. Six teachers from three schools were employed in District A; eight teachers from one school in District B; and, two teachers from two schools in District C.

Pupils

After the initial identification phase, two groups of 16 children were included in the pupil sample. The special needs group consisted of 16 special needs pupils who were integrated in the regular class for more than half of the school day. The nonspecial needs group consisted of 16 children who were not identified as exhibiting any severe emotional, physical or sensory handicaps, did not require any special education services, and were enrolled in the same regular class as the special needs children. Teachers were requested to submit a class list indicating pupils' gender, whether or not they received special education assistance or services, and whether or not they were considered to have severe emotional, physical or sensory problems. The pupils who were receiving special services and/or considered to have a severe emotional, physical or sensory problem were removed from the class list. Two nonspecial needs children, matched by gender to the special needs child enrolled in the same class, were then randomly selected from the modified class list provided by each teacher. After the observations, the nonspecial needs pupil who was present the greatest amount of time during the coding periods was selected for comparative analysis. If both nonspecial needs children were in attendance for the same time periods, then one pupil was randomly selected.

Training of Research Assistants

The researcher trained four university graduates in Education to collect observation data. The mean age of the research assistants was 28.3 years. Their teaching experience varied from one to 11 years, with a mean of 4.5 years.

As noted earlier, the Brophy-Good System (1969) was selected to observe and record teacher-pupil interactions. The procedures provided by this system for training coders were followed. A five-day training period was scheduled prior to the classroom observations. To protect against observer bias, the coders were not informed about the nature of the study. Before the training session, the coders were requested to read the manual, and note any categories or feedback response areas that were difficult to understand. During the training session, each category and response variable was explained with verbal and/or video taped examples, and discussion focused on specific problem areas identified by the coders. Once the coders were familiar with the system and modified coding sheet, portions of the pilot study video tape were shown (see Chapter III). Coders practised recording interactions and discussions followed each coding session. Sessions were extended from five to twenty minute periods. Any discrepancy on how an interaction should be coded was resolved through discussion and documented. Copies of coding rules for any questioned interactions were distributed to the coders for their reference.

By the fifth day of training, the coders demonstrated their proficiency in using the system. Recordings of interactions were fluent and the coders expressed confidence in their ability to observe and record classroom interactions.

At this point, intercoder agreement was assessed as follows. A twenty minute portion of the pilot study video tape which had not been previously observed by the coders was used. Included in this segment were the two major types of instruction: class instruction and seat work activities. Independent recordings of all teacher-pupil interactions were made by the researcher and coders. Coder agreement between each coder and the researcher was then calculated using the formula:

$$\text{Percent agreement} = \frac{\text{agreements between coder and researcher}}{\text{agreements + omissions + disagreements}}$$

(Brophy and Good, 1969, p. 103) for each variable observed. The results of this analysis is summarized in Table 5. The percent agreement ranged from 85.5 to 97.4 and exceeded the 80 percent minimal acceptance level set by Brophy and Good (1969).

Table 5

Intercoder Agreements During Training

Coder	A	B	C	D
Agreements	72	65	74	73
Disagreements	3	7	0	1
Omissions	1	4	2	2
Total	76	76	76	76
% Agreement	94.7	85.5	97.4	96.0

Data Collection

The data collection procedure involved three phases: 1) observation of teacher-pupil interactions; 2) administration of the attitude scale; and, 3) completion of the teacher questionnaire and two forms. Data collection occurred over a ten-week period beginning in March.

Observation of Teacher-Pupil Interactions

A four consecutive day observation was scheduled in each classroom at the convenience of the teachers. Since parent interview and sport days had been scheduled at the schools, the teachers assisted in scheduling the observations to insure that days of coding occurred when instruction would take place in the classroom setting.

Following the arrangement of the observation schedule, each observer was randomly assigned to classes except for one class which a coder assumed because of transportation problems. The number of classrooms each coder was assigned to was based on the observers' schedule during the data collection weeks. Two coders observed in three classrooms each; one observer coded in four classes; and the other coder observed in six classrooms. With one exception, the coders made four consecutive day observations on Monday through Thursday in each of their assigned classes. One class was observed on a Tuesday through Friday schedule due to teacher absenteeism which occurred the preceding Monday. On the first day of observations in each class, the teachers were asked to introduce the observer (see Appendix J). An inconspicuous place to observe in the classroom was identified, which in most cases, was at the side or in the back of the classroom. To minimize possible observer effects upon the teachers and pupils due to the presence of the observer, the first day of observation data were not used in the analysis.

During the four days of observations, the coders recorded all dyadic interactions on the selected pupils during class instruction, recitation, seat work activities and transition periods. The observer also recorded "dummy" codings throughout the four day period on other children in the class so that the selected pupils would not be distinguishable to the teacher and pupils in the class.

All observations were coded within a seven week period. To insure coder reliability, the researcher observed with each coder for a 30 to 60 minute time period in each classroom. Coder-researcher agreement was calculated immediately after each observation check. The researcher-coder percent of agreement for each of the 16 classes observed is reported in Table 6. As shown, coder-researcher agreements were greater than or equal to .80 on all occasions.

Table 6

Reseacher-Coder Percent of Agreement

Observer							
A		B		C		D	
*	%	*	%	*	%	*	%
19/20	90.5	34/41	82.9	23/26	88.5	31/36	86.1
40/43	93.0	24/30	80.0	35/40	87.5	41/44	93.2
33/35	94.3	38/45	84.4	43/49	87.8	52/57	91.2
		12/14	85.7	91/98	92.2		
				17/19	89.5		
				16/17	94.1		

$$*n/n = \frac{\text{Number of Agreements}}{\text{Number of Agreements + Omissions + Disagreements}}$$

Belief Scale Administration

Following the completion of each classroom observation period, a half-hour appointment was scheduled with the individual teacher to administer the scale, A Survey of Beliefs About Special Needs Children and Their Educational Programs. In schools where more than one teacher participated, the scale was not administered until all classes had been observed. All appointments were scheduled within two weeks after the observations.

At the time of scale administration, the teacher was requested to read the directions and definitions and to peruse the scale in case the teacher had any questions. Then, the teacher was informed that the scale should be rated based on the teacher's experiences with special needs children as defined in the instrument. The teacher responded in the privacy of his/her classroom. The completed scale was collected thirty minutes later. The preceding administrative procedures were employed for all 16 teachers.

Professional, Demographic and Questionnaire Data

After the collection of observation recordings and the administration of the belief scale, the teachers were requested to complete the Teacher Professional Data and the Pupil Demographic Data forms, and the Teacher Questionnaire Regarding Integrated Special Needs Children. The completed forms and questionnaire were collected a week later. At that time, the teachers were informed about the study's purpose.

Data Preparation and Analyses

Coding Observation Data

The data from the teacher-pupil interactions were tabulated and coded using the same format as the coding sheet (see Chapter III, Figure 1). Tabulations of the frequencies were coded for the 16 special needs and 16 nonspecial needs children. The tabulation and transfer of coding to data cards were verified by another graduate student. Any discrepancies were rechecked and reverified to ensure accurate coding information.

Percentage Score Data

As described in Chapter III, the percentage score procedure reccommended by Brophy and Good (1969) was used. This procedure "allows direct comparison of the quality of teacher-child interactions in different individuals and groups, despite differences in quantity of dyadic interactions with the teacher" (p. 98). The percentage scores were obtained by converting the coded frequency tabulations to proportions using the percentage formulae for each variable (see Table 4). These scores were calculated using the COMPUTE subprogram of the Statistical Package for Social Sciences (Nie, Hull, Jenkins, Steinnbrenner and Bent, 1975).

It should be noted that in computing the percentage scores for some variables there were cases of missing data values and cases of 0%. For example, in Variable 1 - Praise in Response Opportunity after a Correct Answer, one pupil did not answer any questions correctly, and therefore, the teacher did not have an opportunity to praise the child after a correct answer. In this case, the teacher was dependent on the pupil's answer in order to give specific feedback responses. Since the opportunity to respond after a correct answer was not presented to the teacher, the variable was coded as a missing value. Some other pupils did answer the questions correctly, but the teacher did not praise them. In these cases, the variable was computed as a real zero, and not as a missing value.

The following examples are given when particular teacher responses could not be computed for some pupils. Missing values were noted when:

1. The teacher did not afford a response opportunity to the pupil.
2. The pupil did not answer any questions correctly.

3. The pupil did not respond to any questions with a partially-incorrect, incorrect or no answer.
4. The pupil did not create any work-related or procedural contact with the teacher.

The reason some percentage scores were assigned missing values then, was because initial contacts were not created either by the teacher or pupil and, therefore, feedback responses also would not exist. These missing value cases, however, were accounted for in the percentage scores of contact variables listed within Clusters VIII, IX, and X. If a teacher or child did not create a contact within a specific type of instructional setting, then the percentage score was a real zero.

The next procedure was to convert the percentages to proportions(x) for all applications of the angular transformation $X' = 2 \text{ Arcsin } x$ used in the analysis of proportions (Kirk, 1968, p. 66). As described by Kirk (1968), Bartlett suggests that substitutions be made for proportions equal to 0 or 1. Bartlett recommends that when: 1) $x = 0$, substitute x with ¼n; and, 2) $x = 1$, replace x with 1 - ¼n, "where n is the number of observations on which each proportion is based" (p. 66). The COMPUTE subprogram of the SPSS (Nie et al., 1975) was used to calculate Bartlett's formula and the angular transformations of the percentage score data.

Belief Scale Data and Analysis

The teacher responses to the items on A Survey of Beliefs About Special Needs Children and Their Educational Program were first coded and then transferred to data cards. All codings were verified by a graduate student and there were no errors. Also, it was noted that the 16 teachers responded to every item on the scale.

An item analysis was performed using the LERTAP (Nelson, 1974) computer program. The results of this analysis were examined for internal consistency using the item test correlations, and the overall measure of homogeneity (Hoyt's ANOVA approach) was .90.

Teacher Professional and Pupil Demographic Data

The teacher responses to the items on the Teacher Professional and Pupil Demographic Data forms were tabulated or listed by item. Means and standard deviations were computed for the tabulated items using a programmed calculator. The descriptive responses, coded tabulations and calculated results were verified by a graduate student. Four errors were found and then corrected and reverified.

Teacher Questionnaire Data

The teacher responses to the 27 items on the Teacher Questionnaire Regarding Integrated Special Needs Children were tabulated or listed by item. The items that were tabulated were then converted to percentages using a calculator. The tabulations were verified by a graduate student and no errors were found.

Statistical Analysis

Given the exploratory nature of this study, the following decisions were taken in analysing the data: 1) each cluster would be examined separately from the other clusters; and 2) the variables within each cluster would be examined separately from the other clusters. Consequently, a univariate analysis was adopted for each of the 48 variables rather than a multivariate analysis. Given the small sample size, multivariate analysis was not possible because of the small ratio of subjects to variables. In setting the level of significance, a compromise was taken. The .05 level of significance was selected rather than .01 or .10. The .01 significance level would address the issue of an excessive Type I error rate brought about by the number of dependent variables, whereas, the .10 value would be used in an exploratory, univariate case.

Since the subjects were paired, a 2 x 2 (Teacher Attitude Group x Type of Pupil) fixed-effects, fully-crossed analysis of variance with repeated measures on the second factor was to be employed in order to identify possible interaction effects between the levels of attitude and type of pupils. However, based on the results of teacher attitude, the final analysis was changed and will be described in Chapter V.

CHAPTER V

RESULTS

This study was initially designed to compare regular class teachers' interactions with integrated special needs children to their interactions with nonspecial needs children, and, given differences in interactions, to determine whether or not there was a relationship between teacher interactions and stated attitudes. As will be reported later in this chapter, the stated attitudes of the majority of the teachers were positive with the result that it was not possible to divide the teachers into two distinct groups of adequate sample size. Specifically, two groups of teachers, one with more favorable attitudes, the other with less favorable attitudes, could not be formed. Consequently, it was not possible to statistically address the second of the two purposes of this study.

Presented in this chapter are the results obtained in the study followed by a discussion of the interaction results. The results are organized in four sections. In the initial section, descriptions of the pupil and teacher samples are provided. Second, the psychometric characteristics of the attitude instrument are described and discussed. Third, the results of the teacher interactions with special needs and nonspecial needs pupils are compared. As indicated above, it was not possible to examine the statistical relationship between teachers' stated attitudes and their interactions. Instead, a qualitative analysis was conducted and is presented in the fourth section.

Description of Samples

In this section, the biographic and demographic characteristics of both sample groups are presented. Educational program components distinct for the special needs pupils are included. In addition, the teachers' perceptions about the special needs children in relation to integration, support services, teacher experience and effectiveness, and types of feedback are described.

Biographic and Demographic Characteristics of Pupils

Sixteen special needs and 16 nonspecial needs children participated in the study. As shown in Table 7, 12 pupils were male and 20 pupils were female. Their age ranged from six years eight months to fourteen years five months. The pupils' school grade ranged from grade one to seven. Fifteen of the 16 special needs pupils had repeated at least one school grade. The only special needs pupil who did not repeat a grade was currently in her first year of school. In comparison, none of the nonspecial needs pupils had repeated a school grade. Consequently, the special needs pupils were older than their nonspecial needs classmates.

Fifteen of the 16 special needs pupils were receiving special education assistance; whereas, none of the nonspecial needs pupils were participating in special education services. The mean scores for the

Table 7

Description of Pupils

Pupil Characteristics		Special Needs Pupils	Nonspecial Needs Pupils
1. Number of Pupils and Gender			
	Males	6	6
	Females	10	10
2. Chronological Age			
	Range (years-months)	7-4 to 14-5	6-8 to 13-0
	Mean (years-months)	10-8	9-4
	S.D. (years-months)	2-0	1-11
3. School Grade			
	Range (grade)	1 to 7	1 to 7
	Mean (grade)	3.5	3.5
	S.D. (grade)	1.9	1.9
4. Grades Repeated			
	# of pupils (repeating)	15	0
	Range (of grades)	1 to 2	0
	Mean (of grades)	1.3	0
	S.D. (of grades)	.8	0
5. Class Placements			
a) Special Class prior to 1979-80		10	0
b) Special/Regular	1979-1980 School Year	9	0
c) Protected	1979-1980 School Year	2	0
d) LA/Regular	1979-1980 School Year	4	0
e) Regular	1979-1980 School Year	1	0

Table 7--Continued

Pupil Characteristics	Special Needs Pupils	Nonspecial Needs Pupils
6. Teacher Rating		
a) Reading:	N=14	N=14
Range (grade)	.5 above to 2+ below	2+ above to .5 below
Mean (grade)	1.3 below	.5 above
S.D. (grade)	.9	.5
b) Math:	N=14	N=15
Range (grade)	at to 2+ below	2 above to .5 below
Mean (grade)	1.2 below	.3 above
S.D. (grade)	1.1	.6
c) Social Adjustment:	N=15	N=15
Range	high to low	high to low
Mean	low-average	average
7. Achievement Test Scores - PIAT		
a) Reading:	N=9	N=16
Mean (grade level)	1.4 below	not assessed
S.D. (grade level)	.7	
b) Math:	N=14	N=16
Mean (grade level)	2.2 below	not assessed
S.D. (grade level)	1.0	
8. IQ Scores		
WISC-R/S.B.*:	N=12	N=16
Range (IQ score)	64 to 87	not assessed
Mean (IQ score)	74.33	
S.D. (IQ score)	6.0	

*Standford-Binet scores standardized to WISC-R scores two groups of pupils on teacher ratings in reading and math varied. The special needs pupils on the average were rated below grade level in reading and math; the nonspecial needs pupils were slightly above average. For social adustment, the teachers rated the special and nonspecial needs pupils as low-average and average, respectively. Individual achievement and intelligence test scores were not available for the nonspecial needs pupils. These pupils did not exhibit learning or emotional problems to warrant individual school district testing. The special needs pupils who had been tested on the Peabody Individual Achievement Test had mean scores in reading and math of 1.4 and 2.2 years below grade level, respectively. The results of the IQ scores ranged from 64 to 87 with a mean of 74.33 and a standard deviation of 6.0.

Educational Program Components for the Special Needs Pupils

Additional information about the special needs children and their educational program was obtained from three items on the Teacher Questionnaire Regarding Integrated Special Needs Children (see Appendix G). The results of the teachers' responses are summarized in Tables 8, 9, and 10. As shown in Table 8, special services personnel provided educational instruction in reading to 87.5% of the special needs pupils and to 81.2% in math. A total of 93.8% of the 16 special needs pupils received special education instruction in at least one subject area. The average amount of time spent in specialized instruction is reported for each subject area in Table 8.

The areas of instruction in which the special needs pupils

Table 8

Support Services and Time Provided for Supplemental Assistance to the Special Needs Pupils

Questionnaire Item	Percentage* of Special Needs Pupils Receiving Supplemental Assistance in:			
	Reading/ L. Arts	Math	Spelling	Speech
8. Type of Service:				
Special Class Teacher	43.8	43.8	06.2	06.2
Learning Assistance Teacher	25.0	25.0	0	0
Teacher Aide or Volunteer	18.8	12.5	0	0
Total Services	87.5	81.2	6.2	6.2
Time	Minutes Per Week			
Average Amount of Time Spent in Supplemental Instruction	143	154	80	40

*n=16

Table 9

Subject Areas in Which the Special Needs Pupils Participated with Other Class Members

Questionnaire Item	Percentage* of Special Needs Pupils Participating with Class Members		
	Small Group Instruction	Total Class Instruction	Total
18. Subject Areas/Activities:			
Reading	50.0	12.5	62.5
Arithmetic	12.5	31.3	43.8
Language Arts	6.2	68.8	75.0
Science	6.2	81.3	87.5
Social Studies	6.2	81.3	87.5
Oral French	0	6.2	6.2
Art	6.2	68.8	75.0
Music	6.2	56.3	62.5
Physical Education	6.2	93.8	100.0
Games	6.2	0	6.2

*n=16

Table 10

Types of Individualized Programs Implemented for the Special Needs Pupils

Questionnaire Item	Percentage of Special Needs Pupils with Individualized Programs (N=16)			
	Total	Class(es) Where Implemented		
		Regular	Special	L.A.*
17. Subject Areas:				
Reading	75.0	62.5	31.2	6.2
Arithmetic	100.0	68.8	50.0	12.5
Language Arts	75.0	43.8	50.0	0
Social Studies/Science	25.0	12.5	12.5	0

*Learning Assistance

participated with their regular class peers are listed in Table 9. All of the special needs pupils were instructed with other members of their class in physical education. The majority of the pupils participated in other subject areas with the entire class. In reading, however, of the 62.5% who participated with their class peers, only 12.5% were assigned to instruction with the total class. Less than half of the special needs pupils were instructed in arithmetic in either a group or class setting.

As shown in Table 10, all the teachers indicated that an individualized program in arithmetic was implemented for their special needs pupil. For 68.8% of the special needs pupils, the individualized program was provided in the regular class, while for the remaining individualized arithmetic instruction was provided in either the special or learning assistance class only.

Of the 16 teachers, 75% stated that an individualized reading program was implemented for the special needs pupils. The individualized program was provided in 62.5% of the regular classes, with 18.8% of these programs also implemented in the special class. Another 18.8% of the special needs pupils had individualized reading instruction in the special or learning assistance class only.

In language arts, 75% of the teachers reported that an individualized program was implemented for the special needs pupils. Instruction took place in the regular class for 43.8% of the special needs pupils; 25% of these pupils also received individualized programming in the special class. Another 25% of the pupils were provided with language arts instruction in the special class only.

Characteristics of Teachers and Their Class

As shown in Table 11, twelve teachers were female; four were male. The mean age of the teachers who responded to this questionnaire was 32-7 years with a standard deviation of 7-11 years. The average number of years teaching was 8.3 with a standard deviation of 5.5. Ten teachers reported that they had previously taught special needs pupils in their regular class and one teacher had taught a special class. Five teachers had taken at least one special education course at the undergraduate level.

The mean grade level currently taught by the teachers was 3.4 with a standard deviation of 1.9. The average number of pupils in the teachers' classes was 26.1 with a standard deviation of 4.0. The mean number of pupils receiving learning assistance services was 2.6 with a standard deviation of 1.7; whereas; the mean number of pupils receiving special class instruction was .8 with a standard deviation of .6.

Teacher Responses to the Teacher Questionnaire Regarding Integrated Special Needs Children

The results of the teacher responses from the Teacher Questionnaire Regarding Integrated Special Needs Children are summarized in Tables 12-23. These results provide descriptive information as perceived by the teachers about: 1) teacher and other personnel involvement in the integration process and types of support services offered; 2) teacher experience and effectiveness in teaching the special needs pupil; 3) integration effects on teacher, pupils and instruction; and, 4) types of feedback given by the teacher to the special needs pupil.

Table 11

Description of Teachers and Their Class

Characteristics	Responses			
	N[a]	Range	Mean	SD
Teacher				
Gender:				
a) Females	12			
b) Males	4			
Age (years)	11	23-8 to 45-8	32-7	7-11
Present Teaching Grade Level	16	1 to 7	3.4	1.9
Teaching Experience (years)	13	1 to 18	8.3	5.5
Past Teaching Experience with Special Needs Pupils:				
a) Yes	10			
b) No	6			
Degree Held:				
a) B.Ed.	6			
b) B.A.	2			
c) Normal School	1			
d) None	4			
Undergraduate Majors:				
a) Education	8			
b) Special Education	1			
c) Other	3			
Special Education Courses:				
a) Yes	5			
b) No	8			
Class				
Class Size (pupils)	16	15 to 33	26.1	4.0
Pupils Receiving LA Services	16	0 to 5	2.6	1.7
Special Class Pupils	16	0 to 2	.8	.6

[a] Number of teachers responding to item on Teacher Professional Data form

Teacher and other personnel involvement and support services offered. The responses to Item 1 listed in Table 12 show that 75% of the teachers indicated that the principal was involved in the decision to place the special needs pupil in the regular class. Only 25% of the regular class teachers participated in making the decision to integrate the special needs pupil in the regular classroom. According to the the results of Item 2 in Table 12, 56.2% of the teachers felt that they were selected to teach the special needs pupil without consultation before placement.

The results reported in Table 13 indicate that 87.5% of the teachers selected the special class or learning assistance teacher as being effective in giving on-going support to them. The teacher responses to Item 11 also show that the parent and principal were chosen by 31.2% the teachers as being supportive to them in the integration process.

As reported in Table 14, 68.8% of the teachers stated that the special education (special class or learning assistance) teacher in their school helped to facilitate the integration of the special needs pupil in their class by providing consultation. Also, 75% of the teachers indicated that the special education teacher assisted in the integration process by providing direct instruction to the special needs pupil.

The results for Items 14 and 15 in Table 15 show that 50% of the teachers indicated that they were involved with the special education teacher in planning and implementing their special needs pupil's program. According to the teachers' reponses to Item 16, 68.8% of the teachers reported that they evaluated their special needs pupil's

Table 12

Personnel Involved in the Integrated Placement of the Special Needs Pupil

Questionnaire Item	Percentage of Teachers Responding to Each Item (N=16)
1. Who was involved in the decision to place the special needs pupil in your class (check more than one if applicable):	
Regular Class Teacher	25.0
Special Class Teacher	25.0
Learning Assistance Teacher	18.8
Principal	75.0
Parent	31.2
Counsellor	12.5
School Psychologist	0
Special Education Supervisor	18.8
Nurse	6.2
Other(s) "Do not know"	12.5
2. How were you selected to teach your special needs pupil in your class (check more than one if applicable):	
Self request	6.2
Principal request	25.0
Special Education Teacher request	6.2
Parent request	0
Special Education Supervisor request	18.8
Pupil assisgned without your consultation	56.2
Other(s) "Child was graded to my class"	6.2

Table 13

Personnel Who Gave On-Going Support to the Regular Class Teachers During the Integration Process

Questionnaire Item	Percentage of Teachers Responding to Item (N=16)
11. What personnel are most effective in giving you on-going support relative to your special needs pupil (check more than one if applicable):	
Regular Class Teacher(s)	18.8
Special Class Teacher	75.0
Learning Assistance Teacher	12.5
Principal	31.2
Parent	31.2
Counsellor	6.2
School Psychologist	0
Special Education Supervisor	0
Other(s) "Nurse"	6.2

Table 14

Services Provided by the Special Education Teacher*

Questionnaire Item	Percentage of Teachers Responding to Item (N=16)
3. How has the special education teacher in your school helped to facilitate the integration of the special needs pupil in your class (check more than one if applicable):	
In-service training	0
Consultation	68.8
Assessing child's needs	37.5
Providing material to the regular class teacher	37.5
Planning child's program for the regular class teacher	6.2
Evaluating the child's program for the regular class teacher	18.8
Providing direct instruction to the special needs child	75.0
Other(s)__________	0

*Special Class and/or Learning Assistance Teacher

Table 15

Special Education Teacher's* Involvement in the Special Needs Pupil's Program

Questionnaire Item	Percentage of Teachers Responding to Each Item (N=16)	
	YES	NO
Are you and your special education teacher involved together in:		
14. planning your special needs pupil's program?	50.0	50.0
15. implementing your special needs pupil's program?	50.0	50.0
16. evaluating your special needs pupil's program?	68.8	31.2

*Special Class and/or Learning Assistance Teacher

program with the special education teacher.

As shown in Table 16, 87.5% of the teachers consulted with their special education teacher regarding the special needs pupil integrated in their class. Moreover, 75% of the 16 teachers selected academic reasons for the consultation. Only 31.2% of the teachers consulted with the special education teacher about discipline.

Fifty percent of the teachers stated that they consulted with other school personnel regarding the special needs pupil integrated in their class. The responses to Item 13(a) shown in Table 16 indicated that 31.2% of the 16 teachers consulted with other regular class teachers; 25% of these teachers also consulted with their principal. The main reasons for consulting with other personnel, as reported by the teachers, were for social, emotional and/or discipline reasons.

Table 16

Consultive Services Provided by the Special Education Teacher* and Other School Personnel

Questionnaire Item	Percentage of Teachers Responding to Each Item (N=16)	
12a & 13a. Do you consult with your special education teacher and other school personnel regarding the special needs pupil integrated in your class (check more than one if applicable):		
Special Education Teacher*	87.5	
Regualr Class Teachers	31.2	
Principal	25.0	
Counsellor	6.2	
School Psychologist	0	
Special Education Supervisor	6.2	
Other(s) "Nurse"	6.2	
No Response	50.0	
12b & 13b. What were the reasons for consultation (check more than on if applicable):		
	SET*	SP**
Academic	75.0	12.5
Social	62.5	37.5
Emotional	58.3	25.0
Discipline	31.2	25.0
Other(s) "Health"	0	6.2

*Special Education Teacher (Special and/or Learning Assistance Teacher)
**School Personnel

According to the responses to Item 9 in Table 17, 31.3% of the 16 teachers reported that the supportive services for their special needs pupil had been highly or very highly available. Of these 16 teachers, 37.5% stated that the availability of support services was average; whereas, 18.7% indicated that it was low or very low. The results of Item 10 in Table 17 show that 37.5% of the teachers recommended additional support services. The recommended services identified by the teachers were instructional assistance, teacher aides and materials (see Appendix K).

Table 17

Availability of and Recommendations for Support Services

Questionnaire Item	Percentage of Teachers Responding to Each Item (N=16)
9. The availability of supportive services for accomodating your special needs pupil, such as, learning assistance teacher, special class teacher, counselling has been:	
Very Low	6.2
Low	12.5
Average	37.5
High	18.8
Very High	12.5
Don't Know	12.5
10. Are there any supportive services that are not offered presently which you would recommend to help your special needs pupil:	
Yes	37.5
No	62.5

Teacher experience and effectiveness in teaching the special needs pupil. As shown by Item 4 in Table 18, 25% of the teachers stated that their teacher education prepared them for teaching special needs pupils; 68.8% of the teachers reported that their teacher education did not prepare them for instructing these pupils. According to the results for Item 7, 87.5% of the teachers indicated that they had not participated in in-service training concerning the education of special needs pupils. Only 12.5% of the teachers had been given the opportunity to attend in-service training. The topics covered during in-service training were diagnostic math, language and mainstreaming (see Appendix K). The responses to Item 5 in Table 18 show that 56.2% of the teachers thought they had acquired sufficient skills through their teaching experience to instruct special needs pupils; whereas, 37.5% of the teachers perceived that they did not have sufficient skills for teaching these pupils.

The results reported in Table 19 indicate that 50% of the teachers stated they had been highly successful in teaching the special needs pupil in their regular class; 31.2% of the teachers reported that they had average success. Only 12.5% of the teachers, however, stated they had not been successful in teaching the special needs pupil.

Integration effects on the teachers, pupils and instruction. As shown by the responses to Item 19 in Table 20, 68.8% of the teachers were not apprehensive about having a special needs pupil integrated in their class. The 31.2% that were apprehensive indicated the reasons why they felt concerned about having a special needs pupil integrated in their class. The most frequent concern expressed was whether the teachers were able to meet the needs of these pupils (see Appendix K).

Table 18

Teacher Preparation and Experiences for Instructing Special Needs Pupils

Questionnaire Item	Percentage of Teachers Responding to Each Item (N=16)			
	Yes	No	No Response	Unsure
4. Did your teacher education prepare you for teaching special needs pupils?	25.0	68.8	6.2	0
7. Were you given the opportunity tc participate in in-service training concerning the education of special needs pupils?	12.5	87.5	0	0
5. Based on your teaching experiences, do you think you have acquired sufficient skills to teach special needs pupils?	56.2	37.5	0	6.2

Table 19

Degree of Success the Teachers Experienced in Teaching their Special Needs Pupil

Questionnaire Item	Percentage of Teachers Responding to Item (N=16)
6. Based on your present experience with your special needs pupil, what degree of success have you had in dealing with this child in the regular class:	
Very Low	6.2
Low	6.2
Average	31.2
High	43.8
Very High	6.2
Don't Know	6.2

Table 20

Integration Effects on the Teacher and
the Nonspecial Needs Pupils

Questionnaire Item	Percentage of Teachers Responding to Each Item (N=16)		
	Yes	No	Unsure
19. Were you apprehensive about having a special needs pupil integrated in your class?	31.2	68.8	0
20. Now that you have a special needs pupil integrated in your class, are you still apprehensive?	18.8	81.2	0
21. On the basis of your experience, do you feel your other pupils have benefited from having a special needs pupil integrated in your class?	56.2	31.3	12.5*
22. Would you be willing to assume the responsibility for teaching other integrated special needs pupils?	56.2	18.8	25.0

*Responses were both Yes and No

The results of Item 20 in Table 20 show that 18.8% of the teachers indicated that they continue to be apprehensive about having a special needs child integrated in their class. The teachers' reasons for being concerned included the time involved in teaching and meeting the needs of the special needs pupil (see Appendix K).

According to the results of Item 21 in Table 20, 56.2% of the teachers stated that the nonspecial needs pupils had benefited from having a special needs pupil integrated in their class; whereas, 31.3% of the teachers felt that it had not been beneficial. Twelve and a half percent of the teachers reported that having a special needs pupil integrated in their class was both beneficial and detrimental to the other pupils.

A total of 81.2% of the teachers indicated how integration had been a benefit and/or detriment to the other pupils in their class (see Appendix K). The beneficial aspects of integration were described by 37.5% of the teachers, whereas, only 6.2% stated the detrimental effects on the other pupils. Both the positive and negative effects of integration were reported by 31.2% of the teachers. The benefit that was stated most often was that integration had allowed the other pupils the opportunity to accept people who were different from themselves. The detrimental effect most often reported was that the other pupils had less time in instruction with the teacher.

The results for Item 22 in Table 20 show that 56.2% of the teachers stated their willingness to assume the responsibility for teaching other special needs pupils; whereas, 18.8% indicated they would not assume this responsibility. Twenty-five percent of the teachers were not sure if they wanted to teach other integrated special needs pupils.

As shown in Table 21, 56.3% of the teachers stated that they spent a disproportionate amount of time in planning for the special needs pupils than for the other pupils; 37.5% of the teachers reported that the time spent in planning was not disproportionate. Fifty percent of the teachers indicated that a disproportionate amount of time was spent in instructing the special needs pupils; whereas, 43.8% of the teachers did not feel that a disproportionate amount of time was spent in this manner. Also, 50% of the teachers reported that a disproportionate amount of time was spent supervising the special needs pupil; 43.8% did not indicate this. Of the 16 teachers in this study, 43.8% of the teachers reported that they spent a disproportionate amount of time in conferring with the parents of the special needs pupil; whereas, 43.8% stated that they did not.

Table 21

Integration Effects on Teacher's Time

Questionnaire Item	Percentage of Teachers Responding to Each Item (N=16)		
	Yes	No	No Response
23. Does the placement of the special needs pupil in your class cause you to spend a disproportionate amount time in:			
planning (preparation)	56.3	37.5	6.2
instructing (teaching)	50.0	43.8	6.2
supervising (directing and disciplining)	50.0	43.8	6.2
conferring with parents	43.8	43.8	12.5

According to the results of Item 26 in Table 22, 62.5% of the teachers reported that they felt more help was given to the special needs pupil with his/her assignments than to the other pupils in their class. The responses to Item 27 show that 50% of the teachers stated that the special needs pupil needed more attention than they were presently able to provide; whereas, 43.8% of the teachers did not feel that their pupil needed more attention.

Table 22

Assistance and Attention Required by the Special Needs Pupil

Questionnaire Item	Percentage of Teachers Responding to Each Item (N=16)		
	Yes	No	Unsure
26. Do you feel you give more help to your special needs pupil with assignments than to your other pupils?	62.5	37.5	0
27. Do you feel your special needs pupil needs more of your attention than you are presently able to provide?	50.0	43.8	6.2

Types of teacher feedback given to the special needs pupil. According to Item 24 in Table 23, 75% of the teachers felt that they provided more feedback to their special needs pupil than to the other pupils. Of the 16 teachers in this study, 68.8% stated that helpful, suggestive and encouraging types of feedback were given more often to the special needs pupil in their class than the nonspecial needs pupils. More praise and positive feedback were provided to the special needs pupils as reported by 56.2% of the teachers. Only 12.5% of the teachers felt that either more negative or disciplinary feedback was given to the special needs pupil.

The results of Item 25 in Table 23 show that 43.8% of the teachers reported they spent more time repeating questions and statements to the special needs pupil than to the other pupils in their class. In addition, 62.5% of the teachers indicated that they rephrased questions and statements for the special needs pupil, and 75% of the teachers

Table 23

Types of Additional Teacher Feedback
Given to the Special Needs Pupil

Questionnaire Item	Percentage of Teachers Responding to Each Item (N=16)
24a. Do you feel you give more feedback to your special needs pupil than to your other pupils:	
Yes	75.0
No	25.0
24b. If yes, in what ways do you provide more feedback to your special needs pupil than to your other pupils?	
Type of Feedback:	
Positive	56.2
Praise	56.2
Negative	6.2
Criticism	0
Help: Suggestion	68.8
Encouragement	68.8
Other(s) "Discipline"	6.2
25. If you feel you spend more time with your special needs pupil than with your other pupils in repeating, rephrasing and giving clues during instruction, please indicate.	
Type of Sustaining Feedback:	
Repeating questions and statements	43.8
Rephrasing questions and statements	62.5
Giving clues	75.0

felt that they spent more time giving clues to the special needs child than to the other pupils in their class.

Teacher Attitudes

Psychometric Characteristics of the Attitude Instrument

The results of the pyschometric analysis of the attitude instrument, A Survey of Beliefs About Special Needs Children and Their Educational Programs, are presented in Table 24. As well, the distribution of the teachers' scores on this attitude scale is represented in Figure 2.

As shown in Table 24, the lowest possible overall score on the scale is 38 based on Likert summation. As measured by this instrument, scores posited on the lower side of the scale would tend to indicate less favorable attitudes toward special needs children and integration. On the other end of the scale, the highest possible total score is 190 and, thus, scores on this side would tend to suggest more favorable attitudes. Neutral attitudes would be posited near the midpoint of the scale, namely, the score of 114.

As reported in Table 24, the range of the teacher attitude scores in this study was 86 to 145 with a mean score of 122.75 and a standard deviation of 18.58. The median score was 126.5, and the standard error of measurement was 5.77, corresponding to a reliability coefficient of .90.

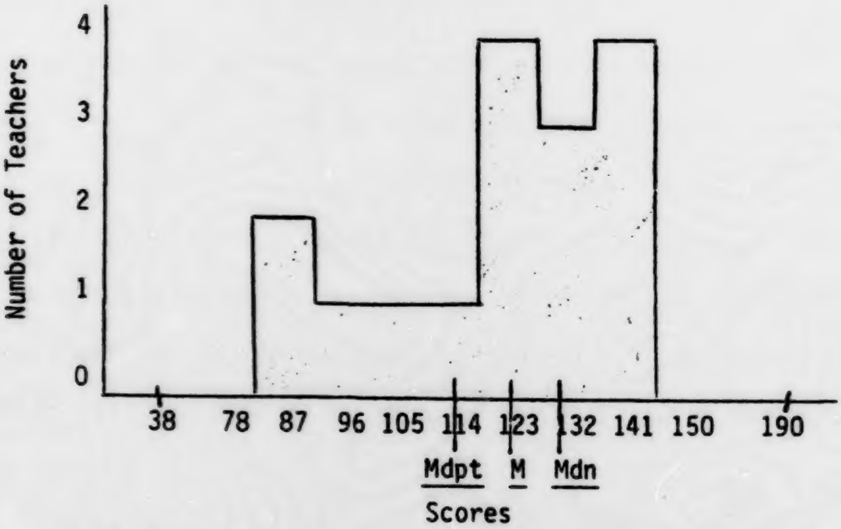
Inspection of the distribution of teachers' scores (Figure 2) revealed that the vast majority of teachers scored above the neutral

Table 24

Psychometric Results of Teacher Attitude Instrument

Statistical Characteristics	Value
Lowest Possible Total Score	38.00
Highest Possible Total Score	190.00
Midpoint	114.00
Lowest Observed Total Score	86.00
Highest Observed Total Score	145.00
Mean	122.75
Standard Deviation	18.58
Median	126.50
Standard Error of Measurement	5.77

n=16



n=16

Figure 2

Distribution of the Teachers' Attitude Scores point. Based upon these results, it was concluded that as a whole, the teachers in the study were more favorably predisposed than not to special needs pupils and integration. Consequently, it was not possible to form two distinct attitude groups, one possessing positive attitudes, the other less favorably disposed, of equal sample size. It was not possible, therefore, to examine the influence of teacher attitude upon the interactive classroom behaviors observed.

Difference between pilot and main study. A comparison of the pilot and main study attitude results needs to be discussed in order to explain the apparent inability of the attitude scale to differentiate positively and negatively predisposed teachers in the main study. As stated in the preceding section, the majority of the main study teachers were more positively predisposed toward special needs children and integration. Such was not the case in the pilot study where both positive and negative predispositions were found (see Chapter III). The most apparent reason for this difference is that the main study teachers likely represented a population of teachers who had been acclimatized to working with special needs pupils in an integrated class setting. In contrast, the pilot study teachers had not experienced that milieu and were likely responding to stereotypic beliefs about special needs children and integration. For the teachers in the main study, the direct contact with the special needs pupils may have contributed to similar and more favorable responses to the attitude scale items. Also, the teachers' reponses to Items 5 and 20 on the Teacher Questionnaire Regarding Integrated Special Needs Children tended to support a positive predisposition toward special needs pupils and integration. Specifically, 81.2% of the teachers were not apprehensive about having a special needs child integrated in their class and felt they had an average to very high success rate in teaching these pupils in the regular class. Furthermore, 62.5% of these teachers had taught special needs pupils in previous years. Consequently, the concept of integration was familiar to them.

Teacher-Pupil Interactions

As reviewed in the literature on mainstreaming, one of the postulated reasons for the limited success of integration is that regular class teachers possess less favorable attitudes toward special needs pupils. The common assumption is that regular class teachers' attitudes relate to their classroom behaviors. In light of the finding that the teachers in this study possessed positive attitudes toward special needs children, the original expectation was modified. It was expected that there would be little or no differences between the teachers' interactions with integrated special needs pupils and with nonspecial needs pupils. Furthermore, if differences occurred, it was expected that they would be in interactions involving the giving of assistance to special needs pupils in the regular class. The results of the observations, summarized below, provide evidence of the accuracy of these expectations.

Before presenting these results, it is first necessary to recognize that since attitude could not used as a factor, the statistical analysis reported in Chapter IV had to be changed accordingly. Differences between the types of pupils (special and nonspecial needs) were analysed using the two sample dependent t-test

(Glass and Stanley, 1970). The dependent *t*-test was adopted given the match of a special needs pupil with a nonspecial needs pupil of the same sex within class. The Statisitical Package for Social Sciences-Subprogram T-Test Pairs (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975) was used to complete this analysis.

Statistical Results of the Interaction Analyses

Examination of the means and standard deviations for both groups of pupils on the 48 dependent variables revealed that for some variables the standard deviations were high. Particularly with the special needs pupils, a greater variability in teacher responses and contacts was shown. In addition, some variables had a low frequency of occurrence and for four of these variables, one of the groups of pupils did not receive any teacher interactions. Specifically, the frequencies of Teacher Praise in Child Created Procedural Contacts and Teacher Criticism in Response Opportunities after Incorrect Answers (Variables 6 and 34, respectively) were zero for the special needs group. Teacher Praise in Teacher Afforded Procedural Contacts and Teacher Nurture in Teacher Afforded Procedural Contacts (Variables 3 and 14, respectively) had zero frequencies of occurrence for the nonspecial needs group. Consequently, these four variables were deleted from the statistical analyses. The results for the 44 remaining variables are reported below, organized by cluster as described in Chapter III. Within each cluster, the means and standard deviations for the special (S) and nonspecial (N) needs pupils, as well as the paired sample sizes (*n*) and dependent groups' *t*-test values for each variable are shown in tabular form.

Table 25

Means, Standard Deviations and Dependent Groups' *t*-tests
of the Percentage of Teacher Praise for the
Special and Nonspecial Needs Pupils

		Mean		Standard Deviation		
Variable	*n*	S	N	S	N	*t*-test
1	14	44.54	12.06	35.68	13.89	3.74*
2	16	26.71	18.72	26.90	26.60	1.79
4	16	2.23	7.59	8.92	18.34	-1.61
5	15	8.95	11.27	10.72	26.65	-0.13

*$p < .05$

Cluster I - Praise Responses. As reported in Table 25, the analysis of Variable 1 - Praise in Response Opportunities After Correct Answers revealed a significant difference between the special (S) and nonspecial (N) needs pupils ($p < .05$). Inspection of the corresponding means shows that after correct answers during group instruction, the special needs pupils received a higher percentage of praise feedback from regular teachers than the nonspecial needs pupils. No significant differences were observed between the two groups of pupils during seat work activities (Variables 2 and 4) and in behavioral contacts (Variable 5).

Cluster II - Positive Feedback. A significant difference between special and nonspecial needs pupils was found for Variable 8 - Positive Feedback in Teacher Afforded Work Contacts ($p < .05$) (see Table 26). Inspection of the means reveals that when the teachers initiated work-related contacts with their pupils, they gave a higher percentage of positive feedback to the special needs pupils than to the nonspecial needs pupils.

Table 26

Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Positive Teacher Feedback for the Special and Nonspecial Needs Pupils

Cluster II		Mean		Standard Deviation		
Variable	n	S	N	S	N	t-test
7	14	78.36	85.24	21.95	24.57	-0.39
8	16	64.83	49.78	25.58	27.77	2.67*
9	16	85.26	79.42	18.10	25.47	0.72
10	15	72.24	78.27	25.61	20.32	-0.51
11	13	82.35	87.74	17.20	13.27	-0.83

*$p < .05$

There were no significant differences for the remaining variables in Cluster II. The teachers provided a similar percentage of positive feedback to both groups of pupils during group instruction (Variable 7), procedural contacts (Variables 9 and 11), and child created work contacts (Variable 10).

Cluster III - Nurture Responses. Of the five nurture variables, only one, Variable 13 - Nurture in Teacher Afforded Work Contacts, revealed a significant difference ($p < .05$) between the two groups of pupils (see Table 27). Examination of the corresponding means indicates that special needs pupils received a greater percentage of nurturing feedback from their teachers than nonspecial needs pupils in work-related contacts afforded by the teachers. For the other variables in Cluster III, teacher nurture responses were not differentiated between special and nonspecial needs pupils during group instruction (Variable 12), and in child created (Variables 16 and 17), and behavioral contacts (Variable 15).

Table 27

Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Teacher Nurture for the Special and Nonspecial Needs Pupils

Cluster III		Mean		Standard Deviation		
Variable	n	S	N	S	N	t-test
12	15	5.03	2.15	11.56	7.38	1.69
13	16	5.47	1.36	9.39	5.42	2.56*
15	16	10.24	7.14	22.56	25.02	0.30
16	15	2.31	1.31	6.37	3.60	0.49
17	13	0.85	0.35	3.08	1.25	0.57

*$p < .05$

Table 28

Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Informative Feedback Given to the Special and Nonspecial Needs Pupils

Cluster IV		Mean		Standard Deviation		
Variable	n	S	N	S	N	t-test
18	10	37.33	24.31	39.12	26.55	0.96
19	10	2.50	5.00	7.91	15.81	-0.35
20	10	7.35	3.75	10.63	11.86	1.66
21	10	6.25	2.50	15.87	7.91	0.60
22	16	21.45	19.41	18.58	25.13	0.74
23	15	27.25	9.97	33.20	18.74	2.09

Cluster IV - Informative Responses. As shown in Table 28, no significant differences were observed between the two groups of pupils on each of the five informative response variables. During group instruction, the teachers gave a similar percentage of sustaining responses (Variable 18), process feedback (Variable 21), correct answers (Variable 20), and extending on the correct answers (Variable 19) to both groups of pupils after they responded incorrectly to their teachers' questions. Also, process feedback given during seat work activities (Variables 22 and 23) was not differentiated between the two groups of pupils.

Cluster V - Neutral Responses. As shown in Table 29, the results from the t tests revealed a significant difference for Variable 24 - No Feedback in Response Opportunities ($p < .05$). Inspection of the corresponding means shows that after answering questions during group instruction, the special needs pupils received a higher percentage of verbal feedback responses from their teachers than did the nonspecial needs pupils.

For the remaining two dependent variables in Cluster V, no significant differences were found. Teachers gave a similar percentage of no feedback responses to special and nonspecial needs pupils when the pupils initiated contacts with the teachers during work-related and procedural interactions (Variables 25 and 26).

Cluster VI - Negative Responses. No significant differences between the two groups of pupils were observed for the seven variables related to negative feedback (see Table 30). Special and nonspecial needs pupils received a similar percentage of negative teacher feedback during group instruction (Variables 27 and 30) as well as in work-

Table 29

Means, Standard Deviations and Dependent Groups' *t*-tests of the Percentage of Teacher Neutral Responses for the Special and Nonspecial Needs Pupils

Cluster V		Mean		Standard Deviation		
Variable	*n*	S	N	S	N	*t*-test
24	15	4.71	13.22	7.60	16.86	-2.69*
25	15	1.89	3.16	4.30	5.99	-0.87
26	13	4.64	4.51	9.17	8.48	0.00

*$p < .05$

Table 30

Means, Standard Deviations and Dependent Groups' *t*-tests of the Percentage of Negative Teacher Feedback for the Special and Nonspecial Needs Pupils

Cluster VI		Mean		Standard Deviation		
Variable	*n*	S	N	S	N	*t*-test
27	10	24.10	16.39	33.40	33.11	0.56
28	16	18.01	25.62	18.48	30.50	-0.67
29	16	13.00	12.97	16.95	14.37	-0.08
30	10	35.06	34.38	39.89	37.88	0.09
31	16	55.07	64.16	44.85	43.04	-0.66
32	15	11.55	11.61	16.24	11.48	-0.22
33	13	13.26	15.09	17.57	27.31	-0.24

related (Variables 28 and 32), procedural (Variables 29 and 33) and behavioral (Variable 31) contacts.

Cluster VII - Critical Responses. The results in Table 31 reveal that for the dependent variables in Cluster VII no significant differences were observed between the special and nonspecial needs pupils. The two groups of pupils received a similar percentage of critical feedback from their teachers during seat work and procedural activities (Variables 35 and 37). Also, the teachers gave a similar percentage of criticism to both groups of pupils when responding to their pupils' general classroom behaviors (Variable 36).

Cluster VIII - Type of Response. The results from the *t* tests shown in Table 32 reveal that Variable 38 - Direct Question and Variable 39 - Open Question were significantly different ($p < .05$). Examination of the corresponding means in Table 32 indicates that teachers initiated a greater percentage of direct questions to special needs pupils than to nonspecial needs children during group instruction. Conversely, teachers initiated a higher percentage of open questions to nonspecial needs pupils than to special needs children.

Cluster IX - Teacher Afforded Contacts. As shown in Table 33, the *t*-tests for two of the six dependent variables in Cluster IX were statistically significant ($p < .05$). Significant differences were found for Variable 40 - Teacher Afforded Response Opportunities in Total Contacts and Variable 42 - Teacher Afforded Work Contacts in Total Contacts. The total dyadic contacts included response opportunities, recitiations, teacher afforded and child created work-related and

Table 31

Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Teacher Criticism for the Special and Nonspecial Needs Pupils

Cluster VII		Mean		Standard Deviation		
Variable	n	S	N	S	N	t-test
35	16	.54	1.45	1.32	3.45	-1.11
36	16	15.85	3.26	34.08	6.18	1.44
37	16	1.71	.16	6.24	.65	1.07

Table 32

Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Type of Response for the Special and Nonspecial Needs Pupils

Cluster VIII		Mean		Standard Deviation		
Variable	n	S	N	S	N	t-test
38	16	71.17	36.64	24.00	30.73	3.70*
39	16	24.99	52.29	24.81	32.93	-3.39*

*$p < .05$

procedural contacts, and behavioral contacts.

Inspection of the corresponding means for Variable 40 shows that the nonspecial needs pupils received a higher percentage of response opportunities from their teachers than the special needs pupils. Of all types of contacts with the teachers, the nonspecial needs children had a higher percentage of teacher contacts during group instruction (response opportunities) as compared to the special needs pupils.

Examination of the means for Variable 42 indicates that the special needs pupils received a greater percentage of teacher afforded work-related contacts than the nonspecial needs pupils. Of all types of contacts with the teachers, the special needs pupils had a higher percentage of teacher contacts during seat work activities as compared to the nonspecial needs pupils.

For the other teacher afforded contact variables, the *t*-test statistics showed that there were no significnt differences. The teachers gave a similar percentage of contacts for each type: recitation opportunities (Variable 41), and behavioral (Variable 45) and procedural contacts (Variabes 43 and 44) to both groups of pupils.

Cluster X - Child Created Contacts. The results reported in Table 34 indicate that the dependent variables in Cluster X were not significant. Special and nonspecial needs pupils initiated a similar percentage of contacts with their teachers in child created types of contacts: work and procedure (Variables 46-48). Thus, during seat work activities, child created contacts related to work and procedural questions were not differentiated between the two groups of pupils.

Table 33

Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Teacher Afforded Contacts for the Special and Nonspecial Needs Pupils

Cluster IX		Mean		Standard Deviation		
Variable	n	S	N	S	N	t-test
40	16	12.22	18.47	11.64	10.20	-2.35*
41	16	2.84	3.28	3.76	5.74	-0.56
42	16	28.00	19.10	14.87	12.72	2.65*
43	16	21.74	18.82	13.87	12.80	0.93
44	16	56.69	50.76	15.67	24.52	0.98
45	16	7.61	11.46	9.28	10.63	-1.33

*$p < .05$

Table 34

Means, Standard Deviations and Dependent Groups' t-tests of the Percentage of Child Created Contacts for the Special and Nonspecial Needs Pupils

Cluster X		Mean		Standard Deviation		
Variable	n	S	N	S	N	t-test
46	16	31.14	32.82	21.87	14.91	-0.63
47	16	60.21	23.96	23.96	31.48	0.30
48	16	37.99	45.99	24.64	16.69	-1.49

Qualitative Analysis of the Teacher Attitude-Interaction Relationship

As reported in the review of literature, special educators have alluded to the possibility that regular class teachers' attitudes toward special needs children and mainstreaming relate to how they behave towards these children. Since it was not possible to use teacher attitude to statistically analyse the attitude and interaction relationship, a qualitative analysis was undertaken. The results of the analysis are described in this section for the purpose of suggesting areas for further study.

The teacher attitude and interaction data were analysed on six teachers in this study. The three teachers who obtained the highest attitude scores on A Survey of Beliefs About Special Needs Children and Their Educational Program, and the three teachers with the lowest scores were compared on types of teacher feedback and contacts given to the special and nonspecial needs pupils in their class. For each dependent variable compared, only mean interaction differences of more than 25% between the highest and lowest scoring teacher groups, and between the type of child, special and nonspecial needs pupils, are described below. The criterion of 25% was selected in order to provide a substantial level at which to interpret possible teacher differences in interactions with special and nonspecial needs pupils. The data for the teacher feedback and contact clusters are listed in Appendix L.

The results of this analysis for the dependent variables in the praise cluster seemed to indicate that both groups of teachers responded with a similar precentage of praise to the special and nonspecial needs pupils. The only difference that appeared to occur between the teachers was that the least favorably disposed teachers tended to give more praise in response opportunity (Variable 1) to their special needs pupils than the three most favorably disposed teachers. Both groups of teachers, however, tended to give more praise to the special needs pupils than to the nonspecial needs pupils during group instruction (response opportunity).

For the positive feedback cluster, differences seemed to occur for three dependent variables. The most favorable attitude teachers tended to give more positive feedback to their special needs pupils in teacher afforded work and procedural contacts (Variables 8 and 9) and in child created contacts (Variable 10) than the least favorable attitude teachers. In comparing the pupil groups, the results appeared to indicate that for these three variables, the least favorably disposed teachers tended to give less positive feedback to their special needs pupils than to their nonspecial needs pupils.

Two differences between the teacher and pupil groups seemed to occur in the nurture cluster. For Variable 15, the three most favorably disposed teachers tended to give more nuture feedback for general classroom behavior to their special needs pupils than the least favorably disposed teachers. Also, the most favorable attitude teachers tended to give more nurture in the behavior category to their special needs pupils than to their nonspecial needs pupils.

For the informative variables in Cluster IV, the data for only one variable, Variable 18, Sustaining Feedback, seemed to indicate differences in interactions. The most favorable attitude teachers tended to give a higher percentage of sustaining feedback to both their special and nonspecial needs pupils after an incorrect answer than the least favorable attitude teachers. In addition, the most favorably predisposed teachers tended to give more sustaining feedback to their special needs pupils than their nonspecial needs pupils. For the other informative variables, however, both groups of teachers seemed to respond similarly.

For the negative and critical feedback variables in Clusters VI and VII, there appeared to be seven differences between the pupil or teacher groups. These differences occurred in Variable 27, Negative Feedback in Response Opportunity, Variable 30, Ask Other in Response Opportunity, Variable 31, Warning in Behavior, Variable 32, Negative Feedback in Child Created Work Contacts, and Variable 36, Criticism in Behavior. The results of the analyses seemed to indicate that the least favorable attitude group gave a higher percentage of negative feedback to their special needs pupils than to their nonspecial needs pupils after work contacts created by the pupils. Also, these teachers tended to give more asking other and critical feedback responses to the special needs pupils than to the nonspecial needs pupils in their class. In comparing the attitude groups of teachers, it appeared that the teachers in the least favorable attitude group tended to give a higher percentage of: 1) negative feedback in both response opportunity and child created work contacts; 2) ask other in response opportunity, and, 3) criticism for general classroom behavior to their special needs pupils than the teachers with more favorable attitudes. The most favorably disposed teachers, however, tended to give a higher percentage of warning feedback for general classroom behavior to their nonspecial needs pupils than the least favorably disposed teachers.

In Cluster VII, Type of Response, both groups of teachers tended to give more direct questions (Variable 38) to their special needs pupils than to their nonspecial needs pupils. The less favoralbe attitude teachers appeared to give more open questions to their nonspecial needs pupils than to their special needs pupils (Variable 39). As well, these teachers tended to give more open questions to their nonspecial needs pupils than the more favorable attitude teachers.

In Cluster X, Child Created Contacts, only one difference seemed to occur. In comparing the pupil groups, the nonspecial needs pupils tended to initate a higher percentage of work contacts with the more favorable attitude teachers than the special needs pupils in the same classroom.

There were no differences betweeen either the teacher or pupil groups for the variables in Cluster V, Neutral Responses, and Cluster IX, Teacher Afforded Contacts.

In summary, the results of the qualitative analysis on the teacher feedback variables appeared to indicate differences between the teachers in their interactions with special and nonspecial needs pupils. The differences that seemed to occur were in positive, negative and sustaining types of feedback. It appeared that the three teachers with the least favorable attitudes were less positive and more critical in some of their interactions with special needs pupils. Also, they were less apt to give sustaining feedback to both groups of pupils in their class than the three teachers with the most favorable attitudes in the study sample. Although these differences could not be tested statistically, the results of the qualitative analysis may help to direct future research in exploring the attitude-interaction relationship.

Discussion of the Results

In this section, the significant and nonsignificant results are discussed. These findings are discussed by comparing the two groups of pupils, special and nonspecial needs children, in the quality of teacher-pupil interactions for praise, positive feedback, nurture, neutral, informative, negative feedback, and critical responses (Clusters I-VII), and in the types of teacher-pupil contacts (Clusters VIII-X).

Comparison of the Quality of Teacher-Pupil Interactions in Praise, Positive Feedback and Nurture Responses (Clusters I-III)

Praise, and positive and supportive responses are considerd as the most effective types of feedback for special needs pupils (Brophy, 1981; Larrivee, 1981). In the present study, the results for Cluster I, Praise, indicated that the teachers gave a higher percentage of praise responses to their special needs pupils than to their nonspecial needs pupils during group instruction. During seat work activities and for general classroom behaviors, praise was not differentiated between the groups of pupils. Thus, the majority of increased praise feedback was given to the special needs pupils in public situations. The nonspecial needs children, therefore, may have been more receptive to the teachers' feedback responses that were given to the special needs children (Brophy and Good, 1974). The greater percentage of praise responses directed to the special needs pupils may have a positive effect on social status and self-esteem if the teacher is considered a role model (Feshbach, 1969; Hurt, Scott and McCroskey, 1978; Jackson, 1968; Turnbull and Schulz, 1979).

In the present study, the teachers' awareness of the use of praise with special needs pupils was apparent from their responses on the Teacher Questionnaire Regarding Integratd Special Needs Children. The majority of teachers perceived that they provided more praise feedback to their special needs pupils than to their other pupils. During group instruction, the observation analysis supported the teachers' increased usage of praise with special needs pupils.

In the areas of positive and nurture feedback, significant differences were found for two variables. These differences occurred for the teacher afforded work contact variables in Clusters II and III. The special needs pupils received a greater percentage of both positive and nurture teacher responses in work-related contacts than the nonspecial needs pupils. The increase of positive and nurture teacher feedback occurred when the teachers initiated contacts in order to give the special needs pupils assistance on their work assignments. Thus, it appeared that the teachers helped these pupils with their educational programs and assignments in a positive and supportive manner.

Although the teachers indicated a greater use of positive and supportive feedback with their special needs pupils on the Teacher

Questionnaire Regarding Integrated Special Needs Children, an extended use of these two types of feedback was observed only in teacher afforded work contacts. During group instruction, procedural, and child created work contacts, this increase was not apparent. Furthermore, in the general classroom behavior category, praise and nurture teacher feedback was not differentiated between the two groups of pupils.

Comparison of the Quality of Teacher-Pupil Interactions in Neutral and Informative Responses (Clusters IV and V)

Within the neutral feedback response categories, one of the three variables considered yielded statistically significant differences. During group instruction, the teachers failed to give feedback responses more often to the nonspecial needs pupils than to the special needs children. Similar results were obtained by Good and Brophy (1972) and Chapman, Larsen and Parker (1979). It appears that the teachers felt a need to give a feedback response more often to the special needs pupils after they answered questions than to the nonspecial needs pupils. In this way, the special needs pupils would be more likely to know if their answers were either correct or incorrect (Brophy and Good, 1974); the ambiguity of no feedback responses was not presented to these children as often as the nonspecial needs group.

In the informative category, no significant differences were found. The teachers gave a similar percentage of process feedback during group instruction and seat work activities to both the special and nonspecial needs pupils. Specifically, the teachers did not give the special needs pupils a more detailed explanation of their answers during group instruction or of their work assignments during seat work activities. In contrast, the results of studies conducted by Silberman (1969), Good and Brophy (1972) and Chapman et al. (1979) indicated that concern ("low achievers") or learning disabled students received more process feedback when the teachers initiated the work contacts. As Brophy and Good (1974) stated this would indicate "efforts by the teachers to work with these students and help them learn material they were having difficulty with" (p. 138). Apparently, the teachers in these past studies provided more assistance to the low achievers and learning disabled students by giving additional process feedback in work-related contacts than the teachers in the present study.

A possible explanation for the difference between the present study and earlier studies may be because of the specific student groups used for comparison. In Good and Brophy's study, the teachers specifically identified the students they felt concerned about in relation to academic work. The comparison group was attachment students who in relation to the concern group were "high achievers." The teachers indicated that the attachment students understood their work assignments and therefore, did not need as much detailed explanation about the assignments as did their concern students. In Chapman et al. study, the teachers main concern with the learning disabled group was to help them through the cognitive processes in order for them to achieve. Therefore, the teachers in the present study may have felt that the special needs pupils were too far below grade level to understand the cognitive processes. Also, the nonspecial needs pupils in the present study varied in academic ability and the teachers may have felt a need to give process feedback to both the special and nonspecial needs pupils in their class.

For the variables of extend and give answer in the informative cluster, the teachers in the present study did not differentiate their interactions between the special and nonspecial needs pupils. The teachers responded with a similar percentage of giving the correct answers or extending the pupils' answers to both the special and nonspecial needs children.

Sustaining feedback has been identified as an effective teaching strategy for mainstreaming teachers (Larrivee, 1981). In the present study, the results revealed that the teachers did not give the special needs pupils more help by clarifying questions after the pupils responded with incorrect or partially incorrect answers. Specifically, the teachers did not repeat, rephrase, give clues or new questions (i.e., sustaining feedback) more often to the special needs pupils than to the nonspecial needs pupils. These results were similar to other studies (Brophy and Good, 1970; Chapman et al., 1979; Silberman, 1971).

In the present study, the teachers' perceptions of using sustaining feedback were obtained on the Teacher Questionnaire Regarding Integrated Special Needs Children. The 16 teachers indicated that they gave more sustaining feedback: repeating, rephrasing and giving clues, to their special needs pupils than to their nonspecial needs pupils. But, as just mentioned, the observation analysis, revealed that the proportion of sustaining feedback given between the special and nonspecial needs pupils was not differentiated. As in other studies (Bylick and Bersoff, 1974; Martin and Keller, 1976), the teachers apparently perceived a need for using sustaining feedback more with the special needs pupils, yet, the increased use of sustaining feedback in classroom interactions with the special needs pupils was not observed.

Comparison of the Quality of Teacher-Pupil Interactions in Negative Feedback and Critical Responses (Clusters VI and VII).

In negative and critical feedback responses, the special and nonspecial needs pupils received a similar percentage of negations and criticisms. This similarity occurred across the six types of contact categories: response opportunity; teacher afforded work, procedural and behavioral; and, child created work and procedural. On the Teacher Questionnaire Regarding Integrated Special Needs Children, none of the teachers felt that they provided more criticism to the special needs pupils.

In behavioral contacts, the teachers did not give more warning or critical responses to the special needs pupils. Although it has been reported that a major mainstreaming concern of regular class teachers is the extra time involved in discipline (e.g., MacMillan, Meyers and Yoshida, 1978; Zawadski, 1973), this was not apparent during the observations of the present study.

In summary, the teachers participating in the study did not give more or less negative feedback to their special needs pupils. This result conflicts with Brophy and Good's (1970) findings of a higher criticism rate directed at low ability children and Chapman et al. (1979) observational results which revealed that the learning disabled group of pupils received more criticism in each instructional type of category including behavioral contacts.

Comparison of the Two Groups of Pupils in Teacher-Pupil Contacts (Clusters VIII-X)

Four significant differences occurred in the comparison of special and nonspecial needs pupils in teacher-pupil contacts. Two of these differences were found within Type of Response (Cluster VIII) and two were within Teacher Afforded Contacts (Cluster IX). In the Type of Response category, the teachers initiated response opportunity contacts by asking the pupils questions which were coded as direct, open, discipline or call-out. The findings showed that during group instruction, the teachers asked special needs pupils proportionally more direct questions; whereas, the nonspecial needs pupils responded proportionally more often to open questions asked by their teachers. In the Teacher Afforded Work cluster, five types of contacts were considered: response opportunity; recitation; teacher afforded work, and procedural; and behavioral. In comparing these five types of contact categories between the two groups of pupils, the nonspecial needs pupils had a significantly greater percentage of response opportunity contacts with their teachers; whereas, the special needs pupils had a significantly higher percentage of teacher afforded work contacts.

In 1970, Flanders stated that "although a teacher has more power than pupils to alter a particular trend in communication, the exchange is 'interactive'" (p. 382). In interaction analysis this would apply to affording nonspecial needs pupils more opportunities to respond during group instruction and to answer open questions. The teachers would tend to have more opportunities to call on nonspecial needs pupils because these children would have more contributory ideas and be better able to participate in group instruction than special needs pupils. Thus, the findings in the present study that nonspecial needs pupils received a higher percentage of contacts during group instruction and that these pupils responded to a greater percentage of open questions are understandable. Moreover, this expected occurrence has been expressed by special educators who are involved in the integration process and has been one of their major concerns. Specifically, where integration should mean participation in group instruction, for the special needs child this has not occurred. During group instruction, the special needs child's ability to participate is restricted, limited by both the special needs pupil's abilities and the teacher's inability to integrate modified teaching within the regular subject curriculum range during class instruction (Brophy and Good, 1974; Hoben, 1980). In 1972, Iano predicted that mentally retarded pupils integrated in the regular classes would experience difficulties in participating in group learning activities. Furthermore, "such participation will be especially difficult in classes composed of children whose capabilities approximate a normal distribution and in which there may be only one or two retarded children" (p. 172).

Apparently, this has been confirmed by the results of MacMillan, Meyers and Yoshida's (1978) study. The regular class teachers who had mainstreamed EMR students in their class indicated that their greatest difficulty was in integrating the EMR children in group discussion and learning activities.

Even though the nonspecial needs pupils in the present study had a higher percentage of contacts with their teachers during group instruction, the teachers asked the special needs pupils a greater percentage of direct questions. By doing so, the teachers appeared to involve the special needs children in group instruction by calling on them directly. Thus, it appeared that the teachers were cognizant of the need to involve special needs pupils in group discussion and did so by providing the special needs pupils opportunities by asking more direct questions.

In order to fully assess this difference in group instruction contacts, it is helpful to consider the finding related to teacher afforded work contacts. Although the nonspecial needs pupils had a higher percentage of teacher contacts during group instruction, the special needs pupils had a greater percentage of teacher contacts during seat work activities. These contacts were related to the pupil's classroom work and were defined in terms of: 1) making a comment about the child's work; 2) helping the child with his/her seat work; or, 3) providing tutorial or individual instruction to the child. Based on integration expectations, this interaction finding also supports past research and the identification of special needs pupils' instructional needs (Good and Brophy, 1972; MacMillan et al., 1978; Silberman, 1969). For example, Silberman (1969) stated that the teachers in his study perceived concern students ("low-achievers") as needing extra help; and thus, the teachers provided more opportunities to assist them with their academic work in private seat work contacts (Brophy and Good, 1974).

The teachers in the present study also perceived the need for giving the special needs pupils more individual instruction and direct assistance as was indicated in their responses to the Teacher Questionnaire Regarding Integrated Special Need Children. Based on the teachers' perceptions and direct observation through interaction analysis, the need for individual instruction and assistance in work assignments was identified and followed through by the teachers during seat work contacts. The teachers' perceptions and actions supported the conclusion made by numerous researchers that special education pupils in the regular class will require more assistance and individual prescriptive instruction (Good and Brophy, 1978; Jones, 1978; Powers, 1983; Schultz, 1982).

The acceptance that "life in the classroom is an unequal affair" (Leach, 1977, p. 198) because of the individual differences of children, needs to be supported in a positive and productive manner. For mainstreamed or integrated special needs pupils, as well as low ability students, "extra efforts" and "extra time" will be required by the teachers in order to provide these children with the opportunity to learn, progress and participate more fully in regular class instruction (Cooper, 1979; Good and Brophy, 1978; Leach, 1977; Palmer, 1979). The majority of teachers who participated in the present study were not only cognizant of the extra time and help required for these pupils but also from their observed behaviors, they assisted the special needs pupils more during seat work assignments and in individualized programming and tutorials. The teachers' verbal comments after the observations also indicated that they were willing to help the special needs pupils and for the most part, the teachers were willing to give the extra time and help that was necessary to instruct special needs children in the regular class.

Although the teachers afforded the special needs pupils with a higher percentage of contacts during seat work activities, the special needs pupils did not create a greater percentage of contacts with their teachers. The results for Child Created Contacts (Cluster X) indicated that the special needs pupils initiated a similar percentage of work and procedural contacts with their teachers as the nonspecial needs pupils. As well, the teachers did not afford more procedural or behavioral contacts to the special needs pupils. In the Teacher Afforded Contacts cluster the teachers provided a similar proportion of contacts between the two groups when responding to their general classroom behaviors and to procedural matters. Fifty percent of these teachers reported that they spent a disproportionate amount of time in supervising and disciplining their special needs pupils compared to their other students. Also, other studies reviewed showed that regular class teachers perceived that mainstreamed special needs pupils cause more discipline problems in the regular class than nonspecial needs pupils. The interaction analysis did not support their shared claim.

CHAPTER VI

SUMMARY, CONCLUSIONS AND IMPLICATIONS

In this chapter, the purpose, procedures and results of the study are briefly summarized. Next, the conclusions and limitations are presented followed by implications for future research and practice.

Summary of the Study

Drummond (1970) stated that "the most basic aspect of the educative process" is meaningful teacher-pupil interactions (p. 36). The importance of the interactions between the teacher and child and the influence these classroom interactions have on the pupils in the class have been documented by many researchers (Brophy and Good, 1974; Dennison, 1969; Englert, 1983; Ensher, 1973; Good and Brophy, 1978; Turnbull and Schulz, 1979; Washington, 1980). The results of observational research have revealed that there are inequalities in classroom interactions (Brophy and Good, 1974; Garner and Bing, 1973; Jackson, 1968; Jackson and Cosco, 1974). However, these observation studies have mainly focused on nondisabled pupils. "In contrast, limited research has been pursued of disabled and teacher interactions" (Chapman, Larsen and Parker, 1979, p. 225). Consequently, the necessity of examining teacher interactions with integrated special needs pupils has been stressed in special education research (Alexander and Strain, 1978; Ensher, 1973; Turnbull and Schulz, 1979).

Special educators have indicated that teacher attitude is one of the most important factors for successful mainstreaming and influences teacher interactive behaviors (Berryman, Neal and Robinson, 1980; Ensher, 1973; Horne, 1979; Turnbull and Schulz, 1979). "It is generally accepted that teacher attitudes can positively or adversely affect student achievement, teacher behavior, and student behavior" (Berryman, Neal and Robinson, 1980, p. 199). More recently, however, Jamieson (1984) cautioned:

> Educator attitudes may not be the best indicators of success for any particular mainstreaming effort. Literature on the relation of attitudes and behavior is inconclusive, especially when paper and pencil tests have been the sole measure of attitudes. It may be that teachers' classroom behaviors toward mildly handicapped children do not differ from those toward average children (Reilly, 1974). (pp. 218-219)

Consequently, the major question addressed in the present study was: Do regular class teachers interact differently with integrated special needs pupils than with nonspecial needs pupils? The second question addressed was: Do regular class teachers' interactive behaviors toward special needs pupils relate to their stated attitudes about integration?

Data were collected using five instruments. The observation of teacher-student interactions were made using the Brophy-Good Teacher-Child Dyadic Interaction System, appropriately modified following recommended procedures (Brophy and Good, 1969). Teacher attitudes toward special needs children and integration were assessed using the scale, A Survey of Beliefs About Special Needs Children and Their Educational Programs. Unlike the observation system, this instrument was developed as part of this study. It was constructed based on Fishbein's attitude theory and instruments used in past studies. Pilot study results yielded a final form consisting of 38 items, with an internal consistency of .95. Teachers were also asked to provide descriptive information about the special needs children, their educational programs, integration, teacher experience and effectiveness, support services and types of feedback; and to provide biographic and demographic information about themselves and their pupils who were observed.

The pupil sample consisted of 16 special needs children and 16 nonspecial needs children, matched for gender and in the same class. The teacher sample comprised the 16 regular class teachers of these pupil pairs.

Four research assistants observed and recorded all teacher-pupil interactions on the selected pupils across three consecutive days in each of the 16 classes. Prior to the observation period, these observers were trained in the use of the modified Brophy-Good System. Also during this period, 48 dependent variables were derived from the Brophy-Good System and categorized into 10 clusters. Following the completion of the observations, the teachers were administered the attitude scale and were requested to complete the teacher questionnaire and two demographic forms.

The analysis of the teachers' attitude scores indicated that the majority of teachers expressed predominantly favorable attitudes toward special needs children and integration. Consequently, it was not possible to form two distinct teacher attitude groups, namely, more and less favorably predisposed teachers, for statistical analyses' purposes.

The data from the observed teacher-pupil interactions showed that four dependent variables had no frequency of occurrence. The remaining 44 dependent variables were analysed univariately within cluster. The results of the teacher-pupil interaction analyses revealed eight significant differences ($\underline{p} < .05$). For the other 36 variables, the teachers gave a similar percentage of contacts and feedback responses to the special and nonspecial needs pupils.

The percentages of occurrence of teacher-pupil interactions for the dependent variables are visually displayed in Figure 3 for each of the two groups of pupils. The variables on which statistically significant differences were found are:

Cluster I - Praise

Variable 1 - Praise in Response Opportunities After Correct Answers

Cluster II - Positive Feedback

Variable 8 - Positive Feedback in Teacher Afforded Work Contacts

Cluster III - Nurture

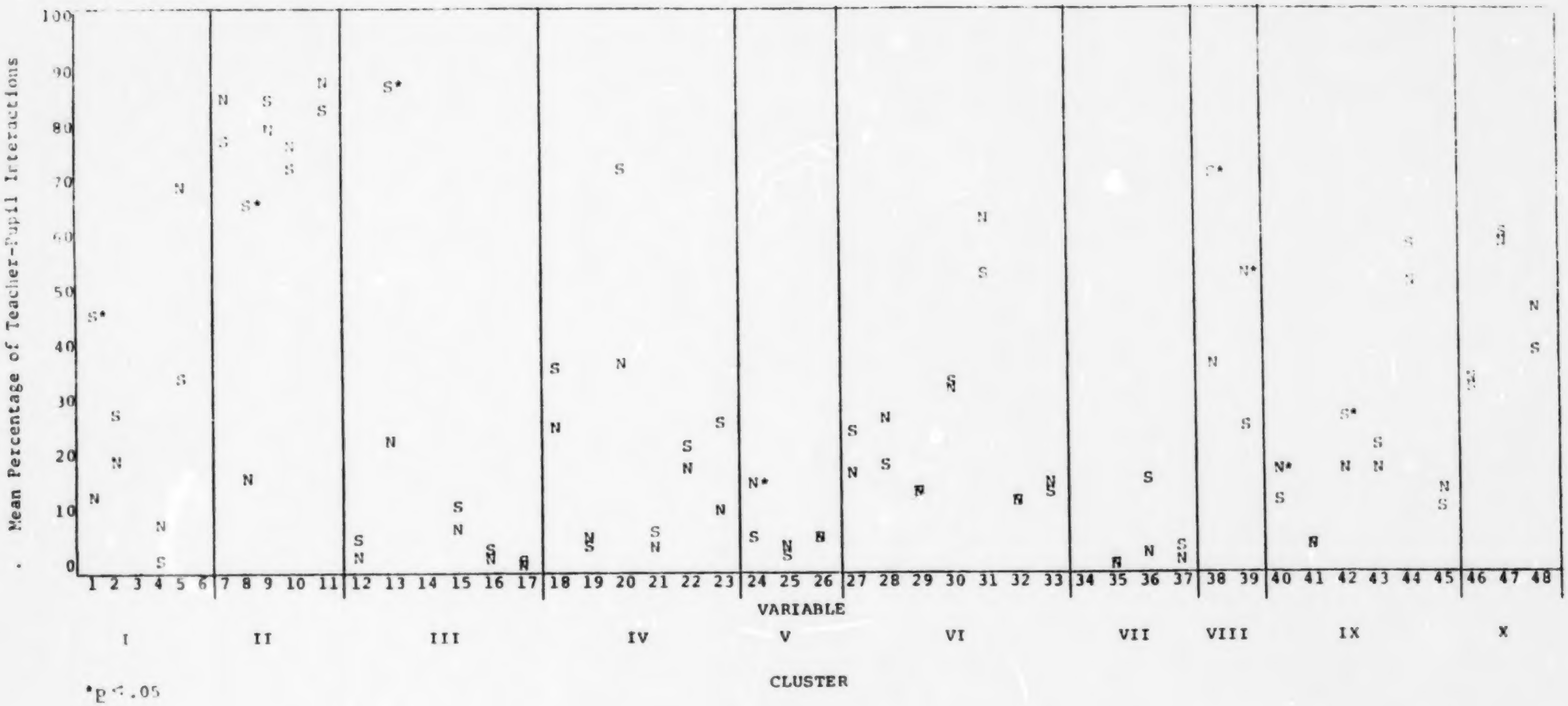
Variable 13 - Nurture in Teacher Afforded Work Contacts

Cluster V - Neutral

Variable 24 - No Feedback in Response Opportunities

Cluster VIII - Type of Response

Variable 38 - Direct Question in Response Opportunities
Variable 39 - Open Question in Response Opportunities



*p<.05

Figure 3

Mean Percentage of Teacher-Pupil Interactions or Contacts with the Special (S) and Nonspecial (N) Needs Children for Each Dependent Variable

Cluster IX - Teacher Afforded Contact

Variable 40 - Teacher Afforded Response Opportunities in Total Contacts
Variable 42 - Teacher Afforded Work Contacts in Total Contacts

As shown in Figure 3, the teachers gave a significantly higher percentage of praise during class instruction (Variable 1), and positive and nurture feedback during seat work activities (Variables 8 and 13) to the special needs pupils than to the nonspecial needs pupils. Also, the teachers gave a lower percentage of "no feedback" during group instruction (Variable 24) to the special needs pupils than to the nonspecial needs pupils. The teachers initiated a greater percentage of direct questions (Variable 38) to the special needs pupils and more open questions (Variable 39) to the nonspecial needs pupils. In addition, the teachers provided a greater proportion of contacts during group instruction (Variable 40) to the nonspecial needs pupils and a higher percentage of contacts during seat work activities (Variable 42) to the special needs pupils.

The nonsignificant results indicated that for 36 dependent variables, the teacher-pupil interactions were not differentiated between the two groups of pupils. As shown in Figure 3, the percentage of praise responses was similar for the special and nonspecial needs pupils during seat work activities and for general classroom behaviors (Variables 2, 4 and 5). Positive and nurture feedback was not differentiated between the groups of pupils during group instruction (Variables 7 and 12), in procedural contacts (Variables 9, 11 and 17), and in child created work contacts (Variables 10 and 16). In addition, the percentage of nurture responses for general classroom behaviors

(Variable 15) was similar. In the neutral category, the teachers did not differentiate betweeen the special and nonspecial needs pupils in their "no feedback" responses during work-related and procedural contacts (Variables 25 and 26).

In the informative, negative and critical clusters, all variables were nonsignificant. The teachers did not give more or less sustaining feedback (Variable 18), extend or give answers (Variables 19 and 20), or process feedback (Variables 21-23) to the special needs pupils. Also, the percentage of negative and critical feedback during group instruction and seat work activities as well as for general classroom behaviors (Variables 27-37) was similar for both groups of pupils.

In the teacher afforded category, a similar percentage of contacts was given to both groups of pupils during recitation (Variable 41), for procedural matters (Variables 43 and 44) and for general classroom behaviors (Variable 45). When the pupils initiated contacts with their teachers, the special needs pupils did not create a higher percentage of contacts. All three child created variables (Variable 46-48) were nonsignificant. Thus, special and nonspecial needs pupils initiated similar contacts with their teachers in the regular class setting.

As indicated previously, teacher attitude could not be used as a factor in the statistical analysis of teacher-pupil interactions because the majority of teachers expressed favorable attitudes toward special needs children and integration. Consequently, a qualitative analysis was undertaken. The three teachers who expressed the most favorable attitudes and the three teachers who expressed the least favorable attitudes were compared on their feedback responses with special and nonspecial needs pupils. The results of the qualitative analysis showed that there were some differences between the groups of teachers. It appeared that the least favorable attitude group gave less positive and more negative feedback responses and less sustaining feedback to the special needs children than the more favorable attitude group of teachers. Therefore, for some feedback variables, there seemed to be an indication that the teachers' feedback responses did relate to their stated attitudes.

Conclusions

The following conclusions were made based upon the teacher attitude findings, and the differentiated and nondifferentiated interactions of the teachers with special and nonspecial needs pupils.

Teacher Attitudes and Behaviors

Even though the teacher attitude-behavior relationship could not be statistically examined, the results of the teacher responses to the belief statement scale indicated that the teachers' stated attitudes tended to be favorable toward special needs children and integration. The teachers' favorable attitudes support the research investigations of Kavale and Rossi (1981), MacMillan, Meyers and Yoshida, 1978, Reynolds, Martin-Reynolds and Mark (1982), and Ringlaben and Price (1981), but are in conflict with other studies (Blazovil, 1972; Childs, 1981; Hudson, Graham and Warner, 1979; Shotel, Iano and McGettigan, 1972). One reason the teachers in the present study may have expressed more favorable attitudes was that the teachers had access to services of the special education teacher in their school. Childs (1981) and

Hudson et al. (1979) suggested that their teachers were less positive about mainstreaming because resources and consultative services were not available to them. Another reason that favorable attitudes were found in the present and some past studies may have been because these teachers tended to have more experience with special needs pupils in an integrated class setting.

Teacher-Pupil Interactions

Eight of the 44 variables revealed differentiated teacher interactions between special and nonspecial needs pupils. These interaction differences were mainly in contacts where the teachers assisted the special needs pupils in the integrated class environment. For example, the teachers gave a higher percentage of praise and verbal feedback responses during group instruction and positive feedback and nurture responses during seat work activities. Also, the teachers provided more assistance in work-related contacts and direct questions during group instruction to the special needs pupils than to the nonspecial needs pupils.

The nondifferentiated findings indicated that in many teacher-pupil contacts, the teachers interacted similarly with the special and nonspecial needs pupils. For some types of interactions this suggests that nondifferential treatment may have helped the special needs pupils to assimilate in the regular class. For example, the teachers were not more negative or critical with the special needs pupils. Also, the special needs pupils did not initate more contacts with their teachers nor were they disciplined more by their teachers. For other interaction patterns, however, differential treatment may have been more beneficial to the special needs pupils. For example, sustaining feedback was not differentiated between the groups of pupils although increased usage of this type of feedback is recommended with low achieving and mainstreamed pupils.

Limitations of the Study

Although the nature of this study was exploratory, the limitations of the study need to be addressed. Perhaps, the major limitation of the study was the small sample size of teachers and pupils. As a result of this restriction, univariate statistics were used in the analysis instead of multivariate statistics. The small sample used in classroom interaction research has been a primary problem for analysis and generalization (Cooper and Good, 1983; Dunkin, 1979; Friedrich, 1982). In the present study, a total of 40 children originally were identified by six school districts as special needs pupils. Only 16 special needs pupils, however, satisfied the selection criteria used in this study. The other 24 children did not meet the qualifications for: 1) more than half-day integration in the regular class; or, 2) the status of borderline or educable mentally retarded. The derived implications for other special needs pupils (i.e., borderline and educable mentally retarded children) can only be made by the reader who may want to relate these results to similar groups of pupils or who may want to focus on similar interaction patterns that emerge from classroom observational research.

Another limitation of the study was the time period allotted for the collection of interaction analysis data. The observers collected teacher-pupil interaction data on three consecutive school days. The results of the interaction analysis indicated that for some variables there were zero or low frequencies of occurrence. Therefore, observation data collected over a longer period of time may provide more information on teacher-pupil interactions that tend to occur infrequently.

Implications of the Study

From the results of the present study, implications for future research and for practice are presented as follows.

Implications for Future Research

First, since the success of integration and mainstreaming has been assumed to be dependent on regular class teachers' attitudes (Berryman, Neal and Robinson, 1980; Graham, Hudson, Burdg and Carpenter, 1980; Kaufman and Hallahan, 1981; Martin, 1974), the assessment of teacher attitude in order to understand its influence on teacher-pupil dyadic interactions needs to be investigated further. In the past, researchers have relied on attitude scales and questionnaires but have not undertaken investigations that would assure that expressed attitudes reflect the teachers' overt behaviors in the classroom. More precise methodology, such as Fishbein and Ajzen's (1975) suggestion of using "multiple act" criterion based on scaling techniques and selected behaviors should be used to obtain measures of attitudes in future research.

In Gottlieb's (1983) review of mainstreaming studies, he recommends that future research focus on teacher expectancies and daily interchanges with mainstreamed educable mentally retarded (EMR) children. As he stated, data need to be collected to answer such questions as:

> Do classroom teachers harbor negative expectancies that are translated into behavior that is observable to peers, or do teachers focus added attention to mainstreamed EMR children in an attempt to assist them to participate as fully as possible in the on-going class routine? (p. 81)

Second, attitude-interaction research should be conducted at different times during the school year. In the present study, the research was investigated near the end of the school year which may have accounted for apparent positive attitudes of the teachers toward their special needs pupils. Research conducted at the beginning and end of the school year may provide information on whether teachers' attitudes and behaviors change over time.

Third, for some teacher-pupil interactions, there was high variability in teacher responses with the special needs pupils. This may have been a result of the special needs pupils being too distinct for grouping. This, coupled with the low frequency of teacher responses or contacts for some variables, may have contributed to nonsignificant results. Therefore, the variability shown with the special needs pupils needs to be researched further by using a larger sample size, different groups of special needs pupils and more observational time for recording teacher-pupil interactions.

Implications for Practice

First, there is a need to assist teachers in becoming more aware of their interactive behaviors with integrated special needs pupils. The present investigation examined teacher-pupil dyadic interactions for comparison study between special and nonspecial needs pupils. At the completion of data collection, however, the teachers expressed interest in their own interactive behaviors with individual children. For example, the teachers questioned if they were appropriately using praise, supportive and sustaining types of feedback in their interactions with special needs pupils. Other questions that were directed to the researcher included how much time was spent with individual pupils for instruction and whether more feedback was given to the special needs pupils. Even though classroom observational research has been perceived as a "threat" to teachers (Nash, 1971), the teachers involved in the present study generally felt that observation with resulting feedback would be valuable in order for them to become more effective in instructing pupils, particularly special needs pupils who were integrated in their classes.

Second, teachers should be taught how to change their interactive behaviors based on observation feedback and effective teaching strategies. Consideration should be given to integrating change strategies that have proven effective through research in various educational areas, such as teacher training, special edcuation, interaction analysis and communication. For example, communication research conducted by Barker (1982), Hurt, Scott and McCroskey (1978), and Gorman (1969) provide guidelines and strategies for educators who are pursuing ways to assist teachers in changing interactive patterns with their pupils. As well, the results of special education research investigated by Larrivee (1981) and Englert (1983) provide characteristics of effective mainstreamed teachers.

Third, inservice education should include methods that help teachers assist each other in observation and as change agents. This may well prove worthwhile not only for improving teacher effectiveness but also for generating more useful interaction analysis data for further study. Evaluation and change models, such as, Teacher Assistant Teams (Chalfant, Pysh and Moultrie, 1979) and Instrument for the Observation of Teaching Activities (National Iota Council, 1971) as well as systematic interaction and feedback systems such as the Brophy-Good Teacher-Child Dyadic Interaction System (1969) could be used to assist teachers and researchers. Video and audio recordings and direct observation by teacher teams may prove useful in helping mainstream class teachers become more aware of their own interactive classroom behaviors and to identify areas that need improvement.

From the results and implications drawn from the present study, differential treatment of special needs children may be necessary in order for teachers to compensate for the greater individual differences and needs of these children. By using observational techniques, systematic feedback procedures and strategies for change, teachers may be assisted in directing and controlling interactions that would be beneficial to both special and nonspecial needs children, and more importantly, to the individual child.

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Appendix A

Pilot Scale I

A SURVEY OF BELIEFS ABOUT SPECIAL NEEDS CHILDREN AND THEIR EDUCATIONAL PLACEMENT

This survey is being pursued as part of a doctoral dissertation in the Faculty of Education at the University of British Columbia. You have been selected to participate in this study.

I am interested in finding out how British Columbian teachers feel about special needs children and their educational placement. A rating scale is provided to obtain this information. You are not obligated in any way to fill out the rating scale or you may refuse to answer any questions without prejudice. The scale takes approximately ten minutes to complete.

Please do not write your name anywhere on this scale. All information on the rating scale will be strictly confidential; anonymity of your response is stressed. By completing the scale, your consent will be assumed. Thank you for your assistance.

Glossary of Terms

The following terms have been defined to clarify the terminology used in this study. Please read each definition carefully before responding to the statements on this scale. It may be necessary to refer again to these definitions when answering specific statements.

Special needs children - for the purpose of this study, special needs children are defined to include children whose IQ scores are between 50-75 as measured on an individualized intelligence test; and whose achievement scores are at least two years below the expected grade placement for their chronological age as measured on district selected standardized achievement tests. Since many school districts are not using specific categorical labels, the term "special needs children" has been substituted for other traditional categories, such as, educable mentally retarded children, mildly retarded children, special class children, etc. Therefore, for the purpose of this study, only those children who may be considered in the former category, educable mentally retarded, should be included when responding to the statements of this rating scale.

Normal children - children who are enrolled in regular classes, and are average in intelligence and development (i.e. not identified as having any emotional, physical, or sensory handicaps).

Special class - self-contained class that enrolls educable mentally retarded children exclusively; usually children within this class require full-time instruction and are only integrated in a regular class for a few activities, if any; instructional emphasis in the special class is on developmental and remedial aspects of educational programming.

Supplementary instructional materials - additional materials than ones normally used by a regular class teacher that are specifically designed, prepared, or obtained to supplement the curricular needs of students with specific educational problems; usually supplementary materials would be used to individualize educational programming; these materials may include people, events, objects, printed matter (such as textbooks, workbooks), charts, photographs, audio and video recordings, television, films, teaching machines, etc.

Supplementary instructional methods - additional methods other than ones normally used by a regular class teacher that are specifically prepared to supplement the curricular needs of students with specific educational problems; usually supplementary methods would be used to individualize educational programming and be presented to the student during individual and/or group instruction; educational methods are systematic plans followed by the teacher in presenting materials for instruction.

Usual school activities - includes any academic and extra-curricular school sponsored activities (e.g. clubs, organizations, teams, holiday programs and presentations, etc.).

Directions

The following statements express beliefs about special needs children and their educational placement. Please read all statements and respond to them on the basis of your own feelings. There are no "right" or "wrong" answers; teachers differ greatly in their beliefs. Please indicate your own feelings by blackening the one response which best expresses your agreement or disagreement with each of the following statements. Remember all statements refer to Special Needs Children.

Please respond to each statement by selecting a numeral from the following five-point code:

1 - I STRONGLY DISAGREE with this statement.

2 - I DISAGREE with this statement.

3 - I am UNDECIDED about this statement.

4 - I AGREE with this statement.

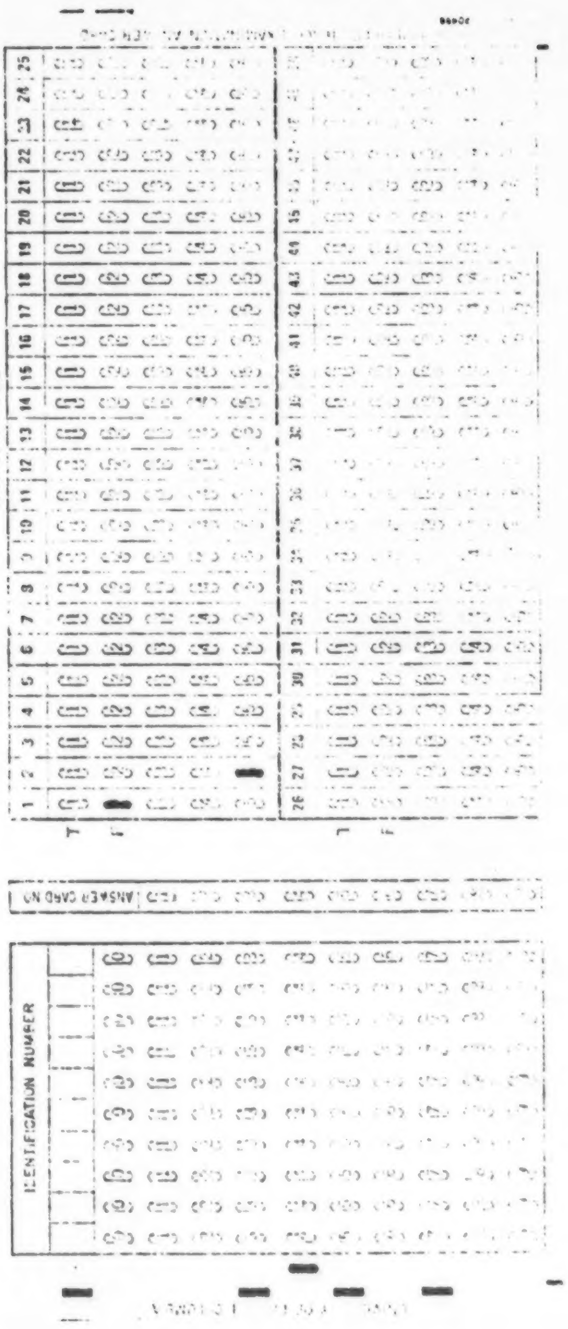
5 - I STRONGLY AGREE with this statement.

Record your choice for each statement in the ANSWER FIELD on the data card. Under each box number, blacken the number which best reflects your belief with respect to the statement.

For example:

If you DISAGREE with statement number 1, blacken the number 2 in the ANSWER FIELD under box number 1.

If you STRONGLY AGREE with statement number 2, blacken the number 5 in the ANSWER FIELD under box number 2.


ANSWER FIELD
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ANSWER CARD NO
IDENTIFICATION NUMBER

1. Special needs children learn more in a special class than in a regular class.

2. Special needs children feel more inadequate in a regular class than in a special class.

3. Special needs children should be placed in a regular class for half or less than half of the day.

4. Special needs children should NOT be socially isolated from normal children.

5. Special needs children in a regular class are socially acceptable to normal children.

6. Special needs children should be able to participate in group instruction in a regular class.

7. Special needs children should be taught by supplementary instructional methods even if they are difficult to implement in a regular class.

8. Special needs children feel inadequate in a regular class.

9. Special needs children tend to create major changes in regular class routine.

10. Special needs children learn more in a regular class than in a special class.

11. Special needs children should be placed in a special class for the full day.

12. Special needs children should be able to function socially at their grade level.

13. Special needs children are LESS likely than normal children to seek involvement in group activities in a regular class.

14. Special needs children should be placed in a special class for half or less than half of the day.

15. Special needs children benefit more in a special class than in a regular class.

16. Special needs children are socially immature.

17. Special needs children work more independently in a regular class than in a special class.

18. Special needs children should be placed in a regular class for the full day.

19. Special needs children should be provided with supplementary instructional materials.

20. Special needs children demand a disproportionate amount of teacher time in a regular class.

21. Special needs children CANNOT function academically on the average level of their normal age peers.

22. Special needs children should be taught by supplementary instructional methods.

23. Special needs children in a regular class have a negative effect on the behaviour of normal children.

24. Special needs children should be able to function socially at their age level.

25. Special needs children become more independent in a regular class than in a special class.

26. Special needs children should be able to participate in the usual school activities.

27. Special needs children tend to create major problems in a regular class.

28. Special needs children behave better in a regular class than in a special class.

29. Special needs children act more immaturely in a special class than in a regular class.

30. Special needs children are LESS likely than normal children to be involved by the group in regular class activities.

31. Special needs children should be placed in a special class for more than half but not the full day.

32. Special needs children are LESS likely to be involved by the group in class activities in a regular class than in a special class.

33. Special needs children are more likely to be discipline problems in a regular class than in a special class.

34. Special needs children CANNOT function academically on the average level of their normal grade peers.

35. Special needs children should be placed in a regular class for more than half but not the full day.

36. Special needs children tend to be discipline problems in a regular class.

37. Special needs children should have supplementary instructional materials even if they are difficult to provide in a regular class.

38. Special needs children in a regular class impede the educational progress of normal children.

Appendix B

Item Polarity

- 1. Special needs children learn more in a special class than in a regular class.

- 2. Special needs children feel more inadequate in a regular class than in a special class.

- 3. Special needs children should be placed in a regular class for half or less than half of the day.

+ 4. Special needs children should NOT be socially isolated from normal children.

+ 5. Special needs children in a regular class are socially acceptable to normal children.

+ 6. Special needs children should be able to participate in group instruction in a regular class.

+ 7. Special needs children should be taught by supplementary instructional methods even if they are difficult to implement in a regular class.

- 8. Special needs children feel inadequate in a regular class.

- 9. Special needs children tend to create major changes in regular class routine.

+ 10. Special needs children learn more in a regular class than in a special class.

- 11. Special needs children should be placed in a special class for the full day.

+ 12. Special needs children should be able to function socially at their grade level.

- 13. Special needs children are LESS likely than normal children to seek involvement in group activities in a regular class.

+ 14. Special needs children should be placed in a special class for half or less than half of the day.

- 15. Special needs children benefit more in a special class than in a regular class.

- 16. Special needs children are socially immature.

+ 17. Special needs children work more independently in a regular class than in a special class.

+ 18. Special needs children should be placed in a regular class for the full day.

+ 19. Special needs children should be provided with supplementary instructional materials.

- 20. Special needs children demand a disproportionate amount of teacher time in a regular class.

- 21. Special needs children CANNOT function academically on the average level of their normal age peers.

+ 22. Special needs children should be taught by supplementary instructional methods.

- 23. Special needs children in a regular class have a negative effect on the behaviour of normal children.

+ 24. Special needs children should be able to function socially at their age level.

+ 25. Special needs children become more independent in a regular class than in a special class.

+ 26. Special needs children should be able to participate in the usual school activities.

- 27. Special needs children tend to create major problems in a regular class.

+ 28. Special needs children behave better in a regular class than in a special class.

+ 29. Special needs children act more immaturely in a special class than in a regular class.

- 30. Special needs children are LESS likely than normal children to be involved by the group in regular class activities.

- 31. Special needs children should be placed in a special class for more than half but not the full day.

- 32. Special needs children are LESS likely to be involved by the group in class activities in a regular class than in a special class.

- 33. Special needs children are more likely to be discipline problems in a regular class than in a special class.

- 34. Special needs children CANNOT function academically on the average level of their normal grade peers.

+ 35. Special needs children should be placed in a regular class for more than half but not the full day.

- 36. Special needs children tend to be discipline problems in a regular class.

+ 37. Special needs children should have supplementary instructional materials even if they are difficult to provide in a regular class.

- 38. Special needs children in a regular class impede the educational progress of normal children.

Appendix C

Pilot Scale II

A SURVEY OF BELIEFS ABOUT SPECIAL NEEDS CHILDREN AND THEIR EDUCATIONAL PROGRAMS

This survey is being pursued as part of a doctoral dissertation in the Faculty of Education at the University of British Columbia. I am interested in finding out how British Columbian teachers feel about special needs children and their educational programs.

Glossary of Terms

The following terms have been defined to clarify their usage in this study. Please read each definition carefully before responding to the statements on this scale. It may be necessary to refer again to these definitions when answering specific statements.

Type of Student

Special needs children - children with IQ scores between 50 and 85 as measured on an individually administered intelligence test, who are receiving special education services in their school on part-time or full-time basis, and who are not identified as having any severe emotional, physical or sensory handicaps. Since many school districts are not using specific categorical labels, the term "special needs" has been substituted for the following traditional categories: educable mentally retarded, mildly mentally retarded, and borderline mentally retarded. For the purpose of this study, only those children who may be considered in these former categories should be included when responding to the statements on this rating scale.

Normal children - children with IQ scores 85 or above as measured on an individually administered intelligence test, who are not receiving any special education services in their school, and who are not identified as having any severe emotional, physical or sensory handicaps.

Type of Class

Special class - self-contained class for special needs children. Children who attend the special class receive more than fifty percent of their instruction in this class. Instructional content is appropriately modified to reflect the special needs of these children.

Regular class - self-contained class in which the majority of children are normal children. Children who attend the regular class receive more than fifty percent of their instruction in this class. Instructional content is guided by the prescribed school curriculum for the grade level.

Learning assistance - educational service provided to some children in addition to the regular or special class. Children who attend learning assistance receive less than fifty percent of their instruction in this service. Instructional content is appropriately modified to reflect the needs of these children.

Directions

The following statements are beliefs that have been frequently expressed by regular class and special education teachers. Many different points of view are reflected in these statements. Some teachers will agree with some of these statements, while others will disagree.

Please circle the number under the column that best describes your agreement or disagreement with the following statements. There are no correct answers; the best answers are those that honestly reflect your feelings.

Scale:

SD = Strongly Disagree

D = Disagree

U = Undecided

A = Agree

SA = Strongly Agree

	SD	D	U	A	SA
1. Special needs children in a regular class perform many of the same tasks as normal children.	1	2	3	4	5
2. Special needs children in a regular class are less likely than normal children to seek involvement in group activities.	1	2	3	4	5
3. Special needs children should be placed in a special class for more than half but not the full day.	1	2	3	4	5
4. Special needs children are socially immature.	1	2	3	4	5
5. Special needs children become more independent in a regular class than in a special class.	1	2	3	4	5
6. Special needs children are likely to create major problems in a regular class.	1	2	3	4	5

		SD	D	U	A	SA
7.	Special needs children participate in most classroom activities in a regular class.	1	2	3	4	5
8.	Special needs children are likely to benefit more in a regular class than in a special class.	1	2	3	4	5
9.	Special needs children in a regular class are more demanding on the teacher's patience than normal children.	1	2	3	4	5
10.	Special needs children are less likely to be involved by the group in class activities in a regular class than in a special class.	1	2	3	4	5
11.	Special needs children in a regular class are likely to be attentive during group instruction.	1	2	3	4	5
12.	Special needs children in a regular class impede the educational progress of normal children.	1	2	3	4	5
13.	Special needs children should be placed in a regular class for the full day with individual instruction within that class.	1	2	3	4	5
14.	Special needs children are less socially isolated in a regular class than in a special class.	1	2	3	4	5
15.	Special needs children prefer being in a regular class than in a special class.	1	2	3	4	5
16.	Special needs children are more likely to be discipline problems in a regular class than in a special class.	1	2	3	4	5
17.	Special needs children work more independently in a regular class than in a special class.	1	2	3	4	5
18.	Special needs children in a regular class are likely to be socially isolated by normal children.	1	2	3	4	5

		SD	D	U	A	SA
19.	Special needs children are an imposition to regular class teachers.	1	2	3	4	5
20.	Special needs children learn more in a regular class than in a special class.	1	2	3	4	5
21.	Special needs children in a regular class have a negative effect on the behaviour of normal children.	1	2	3	4	5
22.	Special needs children should be placed in a regular class for more than half but not the full day.	1	2	3	4	5
23.	Special needs children feel inadequate in a regular class.	1	2	3	4	5
24.	Special needs children are likely to be more academically challenged in a regular class than in a special class.	1	2	3	4	5
25.	Special needs children are adequately taught in a regular class.	1	2	3	4	5
26.	Special needs children are likely to behave better in a regular class than in a special class.	1	2	3	4	5
27.	Special needs children actively participate in extra-curricular activities.	1	2	3	4	5
28.	Special needs children create major changes in regular class routine.	1	2	3	4	5
29.	Special needs children are less likely than normal children to be involved by the group in regular class activities.	1	2	3	4	5
30.	Special needs children should be placed in a regular class with learning assistance for only one period per day.	1	2	3	4	5

	SD	D	U	A	SA
31. Special needs children actively participate in group instruction in a regular class.	1	2	3	4	5
32. Special needs children learn more in a special class than in a regular class.	1	2	3	4	5
33. Special needs children improve more in their social behaviours in a regular class than in a special class.	1	2	3	4	5
34. Special needs children feel more inadequate in a regular class than in a special class.	1	2	3	4	5
35. Special needs children develop academic skills more rapidly in a special class than in a regular class.	1	2	3	4	5
36. Special needs children in a regular class have a beneficial effect on normal children.	1	2	3	4	5
37. Special needs children in a regular class demand a disproportionate amount of teacher time.	1	2	3	4	5
38. Special needs children in a regular class are likely to be discipline problems.	1	2	3	4	5
39. Special needs children are taught more effectively by special class teachers than by regular class teachers.	1	2	3	4	5

Appendix D

A SURVEY OF BELIEFS ABOUT SPECIAL NEEDS CHILDREN AND THEIR EDUCATIONAL PROGRAMS

This survey is being pursued as part of a doctoral dissertation in the Faculty of Education at the University of British Columbia. I am interested in finding out how British Columbian teachers feel about special needs children and their educational programs.

Glossary of Terms

The following terms have been defined to clarify their usage in this study. Please read each definition carefully before responding to the statements on this scale. It may be necessary to refer again to these definitions when answering specific statements.

Type of Student

Special needs children - children with IQ scores between 50 and 85 as measured on an individually administered intelligence test, who are receiving special education services in their school on part-time or full-time basis, and who are not identified as having any severe emotional, physical or sensory handicaps. Since many school districts are not using specific categorical lables, the term "special needs" has been substituted for the following traditional categories: educable mentally retarded, mildly mentally retarded, and borderline mentally retarded. For the purpose of this study, only those children who may be considered in these former categories should be included when responding to the statements on this rating scale.

Normal children - children with IQ scores 85 or above as measured on an individually administered intelligence test, who are not receiving any special education services in their school, and who are not identified as having any severe emotional, physical or sensory handicaps.

Type of Class

Special class - self-contained class for special needs children. Children who attend the special class receive more than fifty percent of their instruction in this class. Instructional content is appropriately modified to reflect the special needs of these children.

Regular class - self-contained class in which the majority of children are normal children. Children who attend the regular class receive more than fifty percent of their instruction in this class. Instructional content is guided by the prescribed school curriculum for the grade level.

Learning assistance - educational service provided to some children in addition to the regular or special class. Children who attend learning assistance receive less than fifty percent of their instruction in this service. Instructional content is appropriately modified to reflect the needs of these children.

Directions

The following statements are beliefs that have been frequently expressed by regular class and special education teachers. Many different points of view are reflected in these statements. Some teachers will agree with some of these statements, while others will disagree.

Please circle the number under the column that best describes your agreement or disagreement with the following statements. There are no correct answers; the best answers are those that honestly reflect your feelings.

Scale:

SD = Strongly Disagree

D = Disagree

U = Undecided

A = Agree

SA = Strongly Agree

	SD	D	U	A	SA
1. Special needs children in a regular class perform many of the same tasks as normal children.	1	2	3	4	5
2. Special needs children in a regular class are less likely than normal children to seek involvement in group activities.	1	2	3	4	5
3. Special needs children become more independent in a regular class than in a special class.	1	2	3	4	5
4. Special needs children are likely to create major problems in a regular class.	1	2	3	4	5
5. Special needs children participate in most classroom activities in a regular class.	1	2	3	4	5
6. Special needs children are likely to benefit more in a regular class than in a special class.	1	2	3	4	5

SD D U A SA

7. Special needs children in a regular class are more demanding on the teacher's patience than normal children. 1 2 3 4 5

8. Special needs children are less likely to be involved by the group in class activities in a regular class than in a special class. 1 2 3 4 5

9. Special needs children in a regular class are likely to be attentive during group instruction. 1 2 3 4 5

10. Special needs children in a regular class impede the educational progress of normal children. 1 2 3 4 5

11. Special needs children should be placed in a regular class for the full day with individual instruction within that class. 1 2 3 4 5

12. Special needs children are less socially isolated in a regular class than in a special class. 1 2 3 4 5

13. Special needs children prefer being in a regular class than in a special class. 1 2 3 4 5

14. Special needs children are more likely to be discipline problems in a regular class than in a special class. 1 2 3 4 5

15. Special needs children work more independently in a regular class than in a special class. 1 2 3 4 5

16. Special needs children in a regular class are likely to be socially isolated by normal children. 1 2 3 4 5

17. Special needs children are an imposition to regular class teachers. 1 2 3 4 5

		SD	D	U	A	SA
18.	Special needs children learn more in a regular class than in a special class.	1	2	3	4	5
19.	Special needs children in a regular class have a negative effect on the behaviour of normal children.	1	2	3	4	5
20.	Special needs children should be placed in a regular class for more than half but not the full day.	1	2	3	4	5
21.	Special needs children feel inadequate in a regular class.	1	2	3	4	5
22.	Special needs children are likely to be more academically challenged in a regular class than in a special class.	1	2	3	4	5
23.	Special needs children are adequately taught in a regular class.	1	2	3	4	5
24.	Special needs children are likely to behave better in a regular class than in a special class.	1	2	3	4	5
25.	Special needs children actively participate in extra-curricular activities.	1	2	3	4	5
26.	Special needs children create major changes in regular class routine.	1	2	3	4	5
27.	Special needs children are less likely than normal children to be involved by the group in regular class activities.	1	2	3	4	5
28.	Special needs children should be placed in a regular class with learning assistance for only period per day.	1	2	3	4	5

	SD	D	U	A	SA
29. Special needs children actively participate in group instruction in a regular class.	1	2	3	4	5
30. Special needs children learn more in a special class than in a regular class.	1	2	3	4	5
31. Special needs children improve more in their social behaviours in a regular class than in a special class.	1	2	3	4	5
32. Special needs children feel more inadequate in a regular class than in a special class.	1	2	3	4	5
33. Special needs children develop academic skills more rapidly in a special class than in a regular class.	1	2	3	4	5
34. Special needs children in a regular class demand a disproportionate amount of teacher time.	1	2	3	4	5
35. Special needs children in a regular class have a beneficial effect on normal children.	1	2	3	4	5
36. Special needs children should be placed in a special class for more than half but not the full day.	1	2	3	4	5
37. Special needs children in a regular class are likely to be discipline problems.	1	2	3	4	5
38. Special needs children are taught more effectively by special class teachers than by regular class teachers.	1	2	3	4	5

Appendix E

TEACHER PROFESSIONAL DATA

Teacher Information

Code Number ____________ Date of Birth ______________

Number of Years Teaching ______________________________

Undergraduate Major(s) ________________________________

Degree Received ______________________________

Graduate Major(s) __________________________________

Number of Graduate Courses Completed ________________

Degree Received ______________________________

Please list any Special Education courses at the undergraduate and/or graduate level that you have taken:

Name of Course(s)	Units
____________________	__________
____________________	__________
____________________	__________
____________________	__________
____________________	__________
____________________	__________
____________________	__________
____________________	__________

Appendix F

PUPIL DEMOGRAPHIC DATA

Total number of pupils in your class ____________________

No. of pupils receiving learning assistance services ____________

No. of pupils receiving special class service ____________

Special needs pupil's chronological age ______ years ______ months

Nonspecial needs pupil's chronological age ______ years _____ months

SPECIAL NEEDS PUPIL

In relation to the other pupils, how would you rate the special needs pupil on social and personal adjustment in your class?

_____ Low _____ Average _____ High

Based on the special needs pupil's classroom performance, what is his/her academic level of functioning in relation to his/her grade placement?

Reading		Arithmetic
________	more than 2 years above grade level	________
________	2 years above grade level	________
________	1½ years above grade level	________
________	1 year above grade level	________
________	½ year above grade level	________
________	at grade level	________
________	½ year below grade level	________
________	1 year below grade level	________
________	1½ years below grade level	________
________	2 years below grade level	________
________	more than 2 years below grade level	________

NONSPECIAL NEEDS PUPIL

In relation to the other pupils, how would you rate the nonspecial needs pupil on social and personal adjustment in your class?

____ Low ____ Average ____ High

Based on the nonspecial needs pupil's classroom performance, what is his/her academci level of functioning in relation to his/her grade placement?

Reading		Arithmetic
________	more than 2 years above grade level	________
________	2 years above grade level	________
________	1½ years above grade level	________
________	1 year above grade level	________
________	½ year above grade level	________
________	at grade level	________
________	½ year below grade level	________
________	1 year below grade level	________
________	1½ years below grade level	________
________	2 years below grade level	________
________	more than 2 years below grade level	________

Appendix G

TEACHER QUESTIONNAIRE REGARDING INTEGRATED SPECIAL NEEDS CHILDREN

The purpose of this questionnaire is to obtain descriptive information for this research project. Additionally, it will aid school systems in maximizing program effectiveness for the benefit of special needs children, regular class and special education teachers. The questionnaire has been devised for regular class teachers who have special needs children integrated into their class for more than half of the school day. The descriptive information will be grouped with the other teachers who have participated in this reearch project. All information on this questionnaire will be strictly confidential; anonymity of your responses is stressed.

Please respond to all questions. If you would like to comment about any question or clarify any answer, please respond on the last page. Naturally, your comments and suggestions would be welcomed.

Thank you for all your assistance and cooperation. Your part in this study has been invaluable and greatly appreciated.

1. Who was involved in the decision to place the special needs child in your class? (Check more than one if applicable)

_____ Regular Class Teacher
_____ Special Class Teacher
_____ Learning Assistance Teacher
_____ Principal
_____ Parent
_____ Counsellor
_____ School Psychologist
_____ Special Education Supervisor
_____ Nurse
_____ Other(s) ______________
____

2. How were you selected to teach the special needs child in your class? (Check more than one if applicable)

_____ Self request
_____ Principal request
_____ Special Education Teacher request
_____ Parent request
_____ Special Education Supervisor request
_____ Pupil assigned without your consultation
_____ Other(s) ______________
____

3. How has the special education teacher in your school helped to facilitate the integration of the special needs child in your class? (Check more than one if applicable)

_____ In-service training
_____ Consultation
_____ Assessing child's needs
_____ Providing materials to the regular class teacher
_____ Planning child's program for the regular class teacher
_____ Evaluating child's program for the regular class teacher
_____ Providing direct instruction to the special needs child
_____ Other(s) _______________
____

4. Did your teacher education prepare you for teaching special needs children? Yes No

5. Based on your teaching experience, do you think you have acquired sufficient skills to teach special needs children? Yes No

6. Based on your present experience with your special needs child, what degree of success have you had in dealing with this pupil in the regular class?

_____Very Low_____Low _____Average _____High_____Very High

7. Were you given the opportunity to participate in in-service training concerning the education of special needs children? Yes No

If yes, who sponsored the inservice training on the education of special needs children? (Check more than one if applicable)

_____ School
_____ School District
_____ Professional Organization
_____ Voluntary Organization
_____ Other _______________

What topics were covered during the in-service training on the education of special needs children? (Please list)

__________________ __________________ __________________

__________________ __________________ __________________

__________________ __________________ __________________

Which topics did you find most valuable? (Please list)

__________________ __________________ __________________

__________________ __________________ __________________

8. In what specific areas (e.g. reading, arithmetic, language, social guidance) does your special needs child receive supplemental assistance? What supportive services (e.g. special class, learning assistance, teacher aide, volunteer, counsellor) are provided for this additional help and how often does your special needs pupil participate in these services? Please list type of service and time period for each area where special assistance is obtained.

Academic/Special Area(s)	Type of Service(s)	Minutes Per Day	Sessions Per Week

9. The availability of supportive services for accommodating your special needs child such as learning assistance teacher, special class teacher, counselling has been:

_____Very Low_____Low_____Average_____High_____Very High

10. Are there any supportive services that are not offered presently which you would recommend to help your special needs pupil? (Please list)

_______________ _______________ _______________

_______________ _______________ _______________

11. Which personnel are most effective in giving you on-going support relative to your special needs child? (Check more than one if applicable)

_____ Regular Class Teacher(s)
_____ Special Class Teacher
_____ Learning Assistance Teacher
_____ Principal
_____ Parent
_____ Counsellor
_____ School Psychologist
_____ Special Education Supervisor
_____ Other _______________

12. Do you consult with the special education teacher regarding the special needs child integrated in your class? Yes No

If yes, what were the reasons for consultation? (Check more than one if applicable)

_____ Academic
_____ Social
_____ Emotional
_____ Discipline
_____ Other(s) _______________
____

13. Do you consult with other school personnel regarding the special needs pupil integrated in your class? (Check more than one if applicable)

_____ Regular Class Teacher(s)
_____ Principal
_____ Counsellor
_____ School Psychologist
_____ Special Education Supervisor
_____ Other _______________

If yes, what were the reasons for consultation with other school personnel? (Check more than one if applicable)

_____ Academic
_____ Social
_____ Emotional
_____ Discipline
_____ Other _______________

14. Are you and your special education teacher involved together in planning your special needs pupil's program? Yes No

15. Are you and your special education teacher involved together in implementing your special needs pupil's program? Yes No

16. Are you and your special education teacher involved together in evaluating your special needs pupil's program? Yes No

17. In what subject areas are individualized educational programs implemented for your special needs pupil? Where are they implemented? (Check more than one if applicable)

Subject Area(s)	Class(es) Implemented		
_____ Reading	_____ Regular	_____ Special	_____ L.A.
_____ Arithmetic	_____ Regular	_____ Special	_____ L.A.
_____ Language Arts	_____ Regular	_____ Special	_____ L.A.
_____ Soc./Science	_____ Regular	_____ Special	_____ L.A.

_____ Not Applicable

18. Please list the subjects or activities that your special needs pupil participates in with other members of your class and indicate the number of other children in the group.

Subject/Activity	No. of Children in the Group

19. Were you apprehensive about having a special needs child integrated in your class? Yes No

If yes, what did you feel most apprehensive about?

20. Now that you have a special needs child integrated in your class, are you still apprehensive? Yes No

If yes, what do you feel most apprehensive about?

21. On the basis of your experience, do you feel your other pupils have benefited from having a spcial needs pupil integrated in your class? Yes No

If yes or no, how has the integration of the special needs pupil been a benefit or detriment to the other pupils?

22. Would you be willing to assume the responsibility for teaching other integrated special needs pupils? Yes No

23. Does the placement of the special needs child in your class cause you to spend a disproportionate amount of your time in planning (preparation), instructing (teaching), supervising (directing or disciplining), and/or conferring with parents?

Planning:	Yes No
Instructing:	Yes No
Supervising:	Yes No
Conferring with Parents:	Yes No

24. Do you feel you provide more feedback to your special needs pupil than to your other pupils? Yes No
If yes, in what ways do you provide more feedback to your special needs pupil than to your other pupils. (Check more than one if applicable)

Type of Feedback

_____ Positive
_____ Praise
_____ Negative
_____ Criticism
_____ Help; Suggestion
_____ Encouragement
_____ Other(s) _______________
____

25. If you feel you spend more time with your special needs pupil than with your other pupils in repeating, rephrasing and giving clues during instruction, please indicate.

_____ Repeating questions and statements
_____ Rephrasing questions and statements
_____ Giving clues

26. Do you feel you give more help to your special needs pupil with their assignments than to your other pupils? Yes No

27. Do you feel that your special needs pupil needs more of your attention than you are presently able to provide? Yes No

COMMENTS:

Appendix H

Introductory Letter to Superintendent

Dear ____________________:

I am a graduate student at the University of British Columbia in the Faculty of Education, Department of Special Education. I am undertaking my research dissertation under the direction of Dr. Stanley Perkins. I am writing to you to obtain your approval to conduct my research study in your school district.

The purposes of my research study are: 1) to observe teacher interactions with EMR and nonhandicapped students in the regular elementary class, and, 2) to investigate regular class teachers' attitudes toward the integration of educable mentally retarded (EMR) students in the regular class. I have enclosed for your perusal a summary of the proposed investigation, my proposal, and additional information that would be requested from the teachers and parents in your school district.

Briefly, the study would involve the selection of regular class teachers who have at least one integrated EMR child assigned to their class. The EMR students would be identified in cooperation with your school system procedures. The teachers and students would be observed in their classrooms on four days within a week period. One trained graduate student observer would be assigned to four classes. Four observers would be employed and data collection would take four weeks. The observers will use the Brophy-Good Teacher-Child Dyadic Interaction System to record interactions between the teachers and selected students. After the observation period, the teachers would be administered a scale to measure their attitudes toward integrating EMR children in the regular class. This scale takes approximately 15 minutes to complete.

I will insure that all data and information collected in your schools would be strictly confidential; teachers and students' names would remain anonymous. Prior consent would be required from the teachers and parents of the children selected.

Please contact me if you have any questions or need additional information. Your consideration is greatly appreciated.

Sincerely,

Darlene Perner

Appendix I

Introductory Letter to Teacher

Dear ____________________:

Your school district has consented to participate in an investigative project. This study is being pursued as a doctoral dissertation in the Faculty of Education at the University of British Columbia.

I am interested in investigating the interactions of students with their teachers through observations in natural classroom settings and would appreciate your class participation in this project. The observations would take place on four days within a one week period. Naturally, these observation times would be arranged at your convenience. Also, I would need to obtain demographic information about you and your class. The forms are enclosed for your perusal.

All results and demographic information from this study will be strictly confidential; your name and your students' names will remain anonymous. However, a summary report of the results will be shared with you at your request.

Naturally, your participation is voluntary and you may withdraw from the project at any time. However, if we are to gain further knowledge on student interactions with their teachers, teachers' cooperation is necessary. Therefore, the assistance of teachers such as yourself would be greatly appreciated. I will contact you within a week to answer any questions regarding this project, and to obtain your permission to observe in your classroom. Thank you for your consideration.

Respectfully,

Darlene Perner

Appendix J

Coder Introduction Letter

Date

Dear (Teacher's Name):

In order to maintain a natural classroom day for the students and yourself, would you please introduce Ms. (coder's name) to your students. Please explain that she will be in your class for the next four days to observe what happens in a *typical* grade (year) class. Also state that she will be observing the class and taking notes, and that she, herself, is a student.

I will be visiting your class on one of the four days to check (coder's name) observations. I will phone to arrange a convenient time.

Again, I want to thank you very much for your cooperation. Your assistance is greatly appreciated.

Respectfully,

Darlene Perner

Phone: (office)
(home)

Appendix K

Teachers' Comments to Items on Teacher Questionnaire Regarding Integrated Special Needs Children

Item 10

Are there any support services that are not offered presently which you would recommend to help your special needs pupils? (Please list)

1. Social Guidance
2. Special and Modified Learning Materials
3. Parent Aide
4. Language Therapy
5. Teacher Aide
6. Assistance in Behaviour Modification Techniques
7. Learning Assistance in Math
8. Learning Assistance in Reading

Item 7

What topics were covered during the in-service training on the education of special needs children? (Please list)

1. Language Development in Young Children
2. Diagnostic Math
3. Mainstreaming Special Needs Children

What topics did you find most valuabe? (Please list)

1. Diagnostic Math
2. Mainstreaming Workshop

Teachers' Comments to Items on Teacher Questionnaire Regarding Integrated Special Needs Children

Item 19

If you were apprehensive about having a special needs child integrated in your class, what did you feel most apprehensive about?

1. "What was I to expect? Am I qualified? What do I do now with the special needs child? Is it fair to the other pupils in the class?"
2. "My inadequacies with dealing with her."
3. "Acting out children."
4. "Reaction of other pupils; needs of pupil academically."
5. "Validity of moving a child from a special class, where a great deal of individual attention could be directed toward meeting needs based on teacher-to-children ratios into a class of many more."

Item 20

Now that you have a special needs child integrated in your class, and you are still apprehensive, what do you feel most apprehensive about?

1. "Whether it is fair to spend so much time with the special needs child when the other children should have equal time."
2. "Emotional behaviour is very disruptive for pupils and me."
3. "I feel the needs could be much more purposefully met in a special setting than in regular stream."

Teachers' Comments to Items on Teacher Questionnaire Regarding Integrated Special Needs Children

Item 21

How has the integration of the special needs pupil been a benefit or detriment to the other pupils in your class?

1. "The class has learned to accept children who are different, respect their rights and appreciate their qualities."

2. "The children have accepted my special needs child. At first they stayed away from her. Now most of the children have made this child their friend."

3. "The children see how hard the special pupil tries, regardless of the difficulties. It is a good experience and exposure."

4. "They have learned to empathize rather than sympathize with special needs people. On the negative side, the regular class members who were in need of individual assistance had to do without in many instances because of the 'time' taken by the special needs child."

5. "Taught the others to accept persons different from themselves but not to pity them. Other pupils missed out on individual attention because of lack of time due to special needs child."

6. "My students have become more accepting of differences in students."

7. "Understanding and developing empathy with those that are different."

8. "Much attention must be spent teaching him things all other pupils know and understand (i.e., raise your hand for a question) and disciplining. I feel they have suffered academically. There has been one benefit, they have learned to not do everything for him as they did in September. As I must spend a disproportionate time with him disciplining, I feel they have suffered emotionally, too. I can not spend the same time getting to know them."

9. "It has been beneficial to the other pupils."

Teachers' Comments to Items on Teacher Questionnaire Regarding Integrated Special Needs Children

Item 21-Continued

10. "Detrimental due to disruptive behaviour, possibly beneficial in teaching other children the patience to deal with him."

11. "A good deal of time is spent on behaviour outbursts - takes away from teaching time of others."

12. "I see no direct benefit derived nor do I see integration as being socially detrimental to other pupils."

13. "This child is in a group of slow and below average children who require a great deal of extra help. I must spend extra time in preparation and instruction which takes from their time."

Appendix L

Table 35

Mean Percent of Feedback or Contact Given to the Special (S) and Nonspecial (N) Needs Pupils by the Three Teachers with the Most (M) and Least (L) Favorable Attitudes, and the Percent of Discrepancy Between the Teacher and Pupil Groups

	Mean % of Fdbk/Contact				Mean % Discrepancy			
	M		L		M - L		S - N	
Variable	S	N	S	N	S	N	M	L
Cluster I								
1	41.3	12.9	66.7	13.3	-25.4*	-0.4	28.4*	53.4*
2	23.9	13.6	22.6	30.9	1.3	-17.3	10.3	-8.3
4	11.9	23.8	0	0	11.9	23.8	11.9	0
5	8.3	19.9	9.7	0	-1.4	19.9	-11.6	9.7
Cluster II								
7	74.2	94.8	83.3	81.2	-9.1	13.6	-20.6	2.1
8	90.9	83.7	62.1	51.6	28.8*	32.1*	7.2	10.5
9	91.1	84.5	69.9	95.6	21.2	-11.1	7.4	-25.7*
10	91.7	82.3	49.5	87.2	42.2*	-4.9	9.4	-37.7*
11	71.2	85.7	77.8	95.0	-6.6	-9.3	-14.5	-17.2
Cluster III								
12	11.8	1.2	13.3	9.5	-1.5	-8.3	10.6	3.8
13	17.3	7.2	6.0	0	11.3	7.2	10.1	6.0
15	32.4	4.8	0	0	32.4*	4.8	27.6*	0
16	4.2	6.5	7.4	0	-3.2	6.5	-2.3	7.4
17	0	0	3.7	0	-3.7	0	0	3.7
Cluster IV								
18	80.0	50.5	0	22.2	80.0*	28.3*	29.5*	-22.2
19	8.3	0	0	16.7	8.3	-16.7	8.3	-16.7
20	15.0	12.5	0	0	15.0	12.5	2.5	0
21	0	8.3	0	0	0	8.3	-8.3	0
22	8.1	9.9	23.2	11.1	-15.1	-1.2	-1.8	12.1
23	16.7	15.7	14.9	0	1.8	15.7	1.0	14.9
Cluster V								
24	4.1	6.5	13.3	9.4	-9.2	-2.9	-2.4	3.9
25	0	6.3	4.8	5.0	-4.8	1.3	-6.3	-0.2
26	10.0	7.2	3.4	0	6.6	7.2	2.8	3.4

Table 35 (Continued)

Mean Percent of Feedback or Contact Given to the Special (S) and Nonspecial (N) Needs Pupils by the Three Teachers with the Most (M) and Least (L) Favorable Attitudes, and the Percent of Discrepancy Between the Teacher and Pupil Groups

	Mean % of Fdbk/Contact				Mean % Discrepancy			
	M		L		M - L		S - N	
Variable	S	N	S	N	S	N	M	L
Cluster VI								
27	0	7.4	40.7	20.4	-40.7*	-13.0	-7.4	20.3
28	10.2	12.5	27.1	11.1	-16.9	1.4	-2.3	16.0
29	4.4	12.4	27.2	4.4	-22.8	8.0	-8.0	22.8
30	6.7	18.5	33.3	11.1	-26.6*	7.4	-11.8	22.2
31	67.1	67.3	57.1	33.3	10.0	34.0*	-0.2	23.8
32	0	6.9	37.2	12.2	-37.2*	-5.3	-6.9	25.0*
33	18.8	7.2	13.4	5.0	5.4	2.2	11.6	8.4
Cluster VII								
35	0.5	3.9	2.3	1.8	-1.8	2.1	-3.4	0.5
36	0	8.9	48.7	19.8	-48.7*	-10.9	-8.9	28.9*
37	0	0	9.1	14.1	-9.1	-14.1	0	-5.0
Cluster VIII								
38	89.4	47.2	65.6	31.4	23.8	15.8	42.2*	34.2*
39	4.5	14.4	23.3	55.6	-18.8	-41.2*	-9.9	-32.3*
Cluster IX								
40	10.6	20.4	3.7	24.2	6.9	-3.8	-9.8	-20.5
41	3.5	6.2	0.6	0	2.9	6.2	-2.7	0.6
42	35.5	22.4	30.0	22.1	5.5	0.3	13.1	7.9
43	33.9	14.9	31.5	25.8	2.4	-10.9	19.0	5.7
44	51.8	61.4	49.1	44.1	2.7	17.3	-9.6	5.0
45	7.0	15.5	8.5	2.7	-1.5	12.8	-8.5	5.8
Cluster X								
46	10.4	24.5	29.3	26.2	-18.9	-1.7	-14.1	3.1
47	60.5	75.8	79.6	82.5	-19.1	-6.7	-15.3	-2.9
48	13.8	40.3	33.1	34.7	-19.3	5.6	-26.5*	-1.6

*25% or More Difference Between Teacher or Pupil Groups